THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK,

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

"The Productions of the Earth will always be in proportion to the culture bestowed upon it."

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For the Farmers' Cabinet.

Lime, No. 1.

Mr. Editor,—The following essays were written to while the tedium occasioned by confinement to the house consequent on a fractured limb. It is not pretended that they contain any thing new, or that they will settle the long-contested question on which they treat. That was not so much the object in view, as by pointing out the results of experience to show what the real questions at issue are, and also to point out the true methods of acquiring knowledge, and of philosophizing, which, if we are to judge by the many crude essays daily appearing, are either not understood at all, or are fast being lost sight of in the mists of metaphysical disquisition.

I am not engaged in farming at present, though my youth and many subsequent years of my life were spent in its practical duties. A recollection of the difficulties then encountered in acquiring knowledge, and a deep-seated conviction of its importance in the prosecution of an art on which the comfort and wealth of every civilized nation mainly depend, has induced me to throw my mite into the general stock. Should you deem my lucubrations worthy of insertion, and other avocations permit, I shall occasionally send you an essay on some subject connected with agriculture, and in the mean time I remain,

Very respectfully,
Samuel Lewis.

Pottsville, 3d Jan. 1842.

On turning over the pages of the Cabinet I observe many essays on lime. Some practical—some speculative—and some a mixture of both. Many of the speculative class incline to the English doctrine of the deleterious nature of magnesian lime to vegetation. Some of your correspondents, however, have taken up the cudgels on the other side, and I think with some effect; but the subject is not yet exhausted, and, from its importance, merits further illustration. I shall not attempt to add any thing new, but only endeavour to place the teachings of theory and practice in striking contrast. The opinion, so far as we have any account of its origin, that magnesia, and of course magnesian lime, is deleterious to vegetation, has the very narrowest possible foundation in fact; and has been copied by subsequent writers, with little inquiry, from the deference paid to great names, or from that apathy which sometimes comes over great and inquisitive minds; and hence has become widely disseminated, and, what is more, I believe, pretty generally believed in.

But while this doctrine was spreading wide and taking deep root in Europe and even in this country, our farmers of south-eastern Pennsylvania, by their silent unostentatious practice, were knocking the whole theory on the head—or, in common parlance, "into a cocked hat." They have conclusively shown, and not on a very small scale either, that the whole doctrine is without foundation as respects this country, and have given us good ground to infer that, with respect to Europe, it is little better than sheer humbug.

Lime has been used for manure in the south-eastern part of Pennsylvania, to some extent, for at least 80 years, and for more than half that time in immense quantities. This lime was procured, in a great measure, from the deposite of limestone in the Great Valley in Chester county. At least it was with lime from this stone that the great value of the article as a manure was first proved in America. This limestone has been shown by repeated analysis to belong to the magnesian class, and much of that, the most esteemed for manure, highly magnesian in its composition.

Sixty years ago the soil of this part of the state was so reduced and worn out by severe cropping and bad management as scarcely to repay the cost of cultivation. What it is now is well enough known without any elaborate description of mine. Yet in all this time, lime, and highly magnesian lime too, has been spread on it in immense quantities. Enough of it, if it were as deleterious as it has been represented, has been put on some of this land to ruin it for ever. But so far from this being the case, the whole country has improved and is improving rapidly, and the

highest limed farms the fastest; until they have become as patterns to be referred to in other places. We by no means wish it to be understood that we impute all this improvement to the use of lime;—good management, judicious rotations of crops, &c., have all assisted, and largely too. But we contend that whatever part of this improvement is owing to the use of lime, is owing to magnesian lime, and to none other. This is no two-penny experiment made in a garden-pot or the corner of a field, and continued for a single year, but it has extended over hundreds of thousands of acres, through a long period of years, and in all kinds of soils, wet and dry, heavy and light. From the tertiary, or rather perhaps diluvial sand of Jersey, to the unchanged remains of the primary rocks of south-eastern Pennsylvania.

Having thus shown that the wide-extended and long experience of this district of country is entirely at variance with the doctrine of the injurious nature of magnesian lime to vegetation, and not only so, but diametrically opposed to it, let no young or timid farmer be deterred from the use of this kind of lime merely because they see its injurious nature formally set forth in books, or hear it strenuously contended for by some of the would-be oracles of the day. Whenever they are outargued by such, let them point, and triumphantly point, to this great and decisive experiment, as destructive of the theory—worth a thousand times more than all the theory that has ever been babbled on the subject. But still let them proceed with their liming. They will never regret the expense.

S. Lewis.

Dec. 24, 1841.

To the Editor of the Farmers' Cabinet.

Subsoil Ploughing.

Mr. Editor,—I am glad to see the notice of a day's ploughing, under the auspices of the Pennsylvania Agricultural Society, for the purpose of testing the merits of the Centre-draught plough, as also for the trial of the subsoil plough, an instrument of which we hear so much and know so little. I had understood that they were always made of monstrous size, requiring great power of draught, but Mr. Prouty informs us the plough intended for trial is to be a two-horse plough only, and if with that we are enabled to break up our subsoils, I shall consider the implement above all price, for although I have never witnessed the operation, I am prepared to expect the greatest and best results from a mode of management which carries conviction to the mind of every practical man. The effect of a pulverized subsoil must indeed be peculiarly friendly to the growth of potatoes, while to *any* crop, be it of what description it might, its power of retaining moisture in a season of drought, or of permitting a superabundance to pass away, must be of paramount importance to *any* soil.

In a late number of the Southern Cultivator mention is made of a person who, "while taking in his corn fodder, observed a great difference between two pieces which were planted at the same time and in the same soil; the fodder in one piece of ground dried up so fast that he could scarcely get through with stripping it, before it was entirely burnt up, to use the common phrase; when, on going to the other piece, he found it green to the ground, and in good plight for stripping. He was struck with this difference in the two lots of corn, and, on reflection, recollected that, on getting ready to plant his corn in the spring, he ran a furrow with a large bar-share plough, after which he followed with a small plough, called a *Bull-tongue*, running it pretty deep in the same furrow, until he had proceeded over half the piece, when he concluded to plant the balance in the single furrow, and discontinued the use of the bull-tongue. The result was, the part planted in the opening made by the small plough, where the large one had been previously run, produced a third more fodder, and of a better quality than that planted in the shallow one made by the large plough alone; besides the great difference there must be in the weight of the corn when drying too fast, for the purpose of making bread. This should be remembered, and the evils of shallow planting be avoided." Now, here was an instance of subsoiling on a very simple plan, which all might adopt and reap the benefit of, without much extra cost or labour. I look forward to the trial of the above ploughs with very great interest, and consider that Mr. Prouty has taken just the best mode possible to bring his ploughs into notice. I hope he will provide a very strong span of horses.

A. C.

For the Farmers' Cabinet.

Cooking Food for Stock.

At length a due regard to the importance of cooking food for stock seems to be awakening up amongst us, and many are the inquiries for the best mode of conducting the process—whether by steaming or boiling—as also for the best and most convenient and economical apparatus for the purpose. Steaming has generally obtained the preference in the estimation of those who have been cogitating on the subject, but I am inclined to believe that, when it becomes generally practised, boiling will be preferred, and chiefly for these reasons:—first, all articles may be properly and easily cooked by boiling, but not by

steaming — witness cabbage, meal, and the flesh of animals, that might often be devoted as food for hogs, under circumstances that would not warrant its use for man. And, second, the water in which these and all other articles are boiled will be found to contain a very large portion of their essence: consequently, it ought to be retained for use; the opinion that the water in which potatoes have been boiled is deleterious, being without foundation. And in this a quantity of meal should always be boiled for the whole of the time the operation is going on, when, at the end, the *soup* will be of greater importance, as an article of food, than any steaming could be made to produce—the dead carcass of a sheep, for instance, with a dozen large heads of cabbage cut fine, and a bushel or two of corn and cob meal stewed together in a couple of hogsheads of water, until the whole forms an amalgam — what could constitute a more luscious repast to fatting hogs! and in a proper apparatus the cooking could be performed slowly and effectually for a very trifling cost of fuel. Then, again, the cooking of corn-stalks—how much better could this be done by boiling, when a small quantity of corn and cob meal might be added, and a thick soup prepared that, with a small quantity of cut hay mixed, would form altogether the most palatable food either for cows or horses. There appears to me no question which would be the *best mode* of preparing cut food, while those who advocate steaming seem to have been biassed by the consideration that it is a *quicker* mode of proceeding. Mr. Editor, all our proceedings are marked by a *hurry* that would almost deserve the name of recklessness—we cannot be content to do a thing well, it must be done quickly and cheaply, and often indeed without regard to any other consideration. It is granted that steaming may be made a quicker process, but by properly constructed boilers working in pairs, according to a plan that has been proposed, a sufficient quantity of food for a very large stock of cattle and hogs could be prepared by a lad of fifteen, the cost of labour being more than repaid even by the superior quality of the manure produced—a consideration which some of our friends might designate as a trading in trifles—well, be it so; I am sure that the manure prepared by such a process would be found very essential to the raising of heavy crops.

I find that Mott's portable cast-iron furnaces are getting much into vogue for this purpose; they are very convenient and economical, but it is objected their egg-shaped bottom robs the boiler of its capacity, and is not the best form to economize fuel. The patent consists in enclosing a common iron boiler in a cast-iron jacket, by which the heat is *given out*, and not *retained*, as is the case when boilers are set in brick-work; iron being a conductor of heat—brick a non-conductor. If, therefore, any one having a boiler were to surround it with a sheet of thin boiler-iron bent into circular form and riveted, leaving a space between it and the boiler about two inches wide, for the heat and smoke to pass, and build up his bricks against it, he would find a great saving of time as well as fuel to arise from the alteration. At all events, the cooking of food for stock, by some mode or other, ought to be adopted, by which an additional profit could be obtained without an additional outlay of capital—an important consideration.

JOSIAH KENT.

Conservatory at Chatsworth.

THIS magnificent structure has been recently erected under the direction of Mr. Paxton, the superintendent of the splendid establishment of the Duke of Devonshire. It is finished except as to the gateway leading to it, the cost being about $250,000. The length of the building is 275 feet, width 130 feet, height 65 feet. It is of stout glass from the ground and on all its surface. A palm tree brought from a distance, and between 30 and 40 feet high, is now flourishing in it; it was given to the Duke by Lord Tankerville, and the removal and expense of planting it cost upwards of $2000. The house is heated by hot water, and the chimneys communicating with the furnaces are not seen when at the conservatory, the smoke being conveyed by horizontal iron pipes some hundred feet distant, and is lost in the forest. A piece of rock-work, more than 20 feet high, and which is ascended by a flight of stone steps, is at one end of the house; it is covered by orchideous plants, and from it is a fine view of the disposition of the plants which adorn the parterre below. There is a gallery quite round the house, and from it, by opening a valve, water is thrown quite over the house. The house is stocked with most choice exotics from all the habitable globe, and it is, in fact, the *ne plus ultra* of conservatories! The mansion of the Duke — the paintings, furniture, amongst which are the coronation chairs from the time of the first George; the gateway, and park, and waterworks are all in keeping with the structure spoken of. The grape, peach and pine houses (the garden being twelve acres in extent) are at a distance from the residence; and in the centre of which is Mr. Paxton's house—embracing all that could be desired by any private gentleman.—*Hort. Mag.*

AGRICULTURE *alone* can be considered as the *creator* of wealth.

For the Farmers' Cabinet.

Hospital for Sick Animals.

Every farm should be furnished with a field set apart as a hospital for sick animals, and I believe it is customary to make some such arrangement, the orchard being often appropriated to that purpose; but when we reflect upon it, we know not that a worse selection can be made, for there the herbage is always inferior, in consequence of the continual shade of trees, which engenders the growth of a long and sour grass, that animals in a state of sickness, with depraved appetites, are often found to prefer to that which is more nutritious and grown on more healthy spots; by which their malady is often increased. Add to which, the orchard is often situated on low ground, perpetual shade rendering the place cold and chilly. But this is not the worst of it, for here also are found the hogs, the calves and the poultry, which, by continually travelling over the sod, render the herbage particularly offensive to sick animals of other descriptions, turning their enclosure into a *hospital* indeed, with sight and sounds and smells that are calculated to increase rather than to alleviate their woes. And to this close and unwholesome spot the poor creatures are often confined, until the nausea arising from their own filth—which is in many disorders peculiarly offensive—has rendered their food disgusting to them; and this is particularly the case with sick sheep, whose natural habits of cleanliness are proverbial.

Now it is desirable that the hospital for sick animals should be as different a place as possible from that which has been described; it should be a field that is dry, well watered, with sufficient shade, but not continuous; with good shelter from rain and wind, fine herbage and plenty of it; for cattle should not be compelled to the labour of toiling early and late to procure a belly-full while sick, but rather be enabled to recruit their strength, and pay something for their holidays of sickness and cessation from labour. And certainly the most expert veterinary surgeon I ever knew, and almost the only one I employ, is *Dr. Green*; for whenever I have a horse that is ailing, or a cow that is queer, I send them to *Dr. Green*, and a month's run in good grass is the cheapest physic that I can find; the Doctor returning them to me at the end of that time, able and willing to work and make up for lost time, and not emaciated by bleeding, and purging, and blistering, and starvation.

But the hospital should be so situated as to admit of sub-division by means of good fences, so that at any time the sick stock could be shifted from one compartment to another with care and quietness, by which the pasture might be preserved sweet and uncontaminated, and a fresh growth of herbage be encouraged against another removal: and this should be done on the same principle that we endeavour to excite the appetite of our sick friends by administering to them a change of diet, with cleanliness and quietness—things so essential, we all know, to the recovery of lost health in *man*, and therefore in *animals*.

I am led to these remarks from having lately visited the *hospital* of a farm belonging to a friend in —— county, into which animals of many kinds were crowded, with a number of sick sheep, whose woe-begone countenances—and what animal has a countenance so deplorable as a sick and pining sheep!—spoke in a language, silent but deep, the peculiar discomfort of their situation; while the filth from them had contaminated even the atmosphere of the enclosure! Indeed, I have no doubt many animals are sacrificed to a want of attention, convenience and cleanliness during a time of sickness, while the danger arising from infection is great, and is often severely felt. Every practical man must have remarked, that many individuals of his flock of sheep during the autumn, when there is a short supply of food, are very apt to become lax in their bowels; this, I believe, is often occasioned by a want of fresh pasture, the chilly state of the atmosphere, and the impurity of the air, arising from a filthy and close-fed sod, in many places covered thickly with their excrements, causing disorganization in their digestive organs, and exhibiting the effect in a disarrangement of their bowels; all which I believe might often be remedied by a change to a high and dry and sweet pasturage. The subject is of more importance than will at first be imagined, and the consideration of it would richly repay the interests of the stock-breeder. Subscriber.

Blossom Buds Perishing in Winter.

A correspondent wishes to know why the blossom buds of the peach and apricot perish in winter? and also, if there is any way to prevent such loss?

A flowing of the sap late in autumn, or in winter, followed by intense cold, has long been considered as the cause of this damage; and we have no doubt of its being the true cause; for those buds can endure a very low temperature, if they are not *started* by unseasonable warmth. We have no knowledge that they have ever been killed in this condition, by the severest cold of this climate—perhaps ten or fifteen degrees below zero, and in the elevated region between the Susquehanna and the Delaware, they have probably endured a depression of ten degrees more.

Our coldest winters, when not interrupted by thaws, have generally, if not always, been succeeded by fruitful seasons. In the winter of 1831-2, the snow drifted around a peach tree in our fruit garden, so that one low limb was entirely buried. This rough weather was succeeded by a thaw soon after New Year's, and the thaw by intense cold.—Peaches were very scarce in the following season. The highest limbs—the very tops—to which the reflected heat from the ground could scarcely reach—had a few, while the limb which was buried in the snow, was loaded down with fruit. The same effect was produced on a limb that rested on the roof of a building, and was covered up in a drift. The warm winds that started the other buds, passed over without touching, and left it torpid. On bleak northern aspects, we believe the peach tree is generally productive in this climate; and we explain the following cases on the same principle:

For many years we resided in a wide valley, bounded on two sides by high hills. In the valley the peach was an uncertain crop; but on the hills it rarely failed. A careful observer, who lived in a more sheltered valley of the same district, assured us that the peach tree with them was unfruitful as often as six years out of seven. In valleys the temperature is more variable than on the hills—warmer at one time and colder at another; for it has been ascertained that in severe but calm weather, the cold air settles down in the lowest places. Last winter was milder than usual, and yet we had *some* shrubs more injured than in seasons of intense cold. It appears that in these shrubs the sap had started, and the sharp frosts that followed were destructive to a part of their branches. Treading down the snow so as to accumulate a compact mass round the tree, and then covering it with straw, has been found useful. We have seen an apple-tree retarded in its vegetation for a fortnight in the spring, by piling wood round it; but the weather here is so variable and uncertain, that what was useful in one season, may be useless in another.—*Gen. Far.*

A Beautiful Discovery.

The beautiful discovery of Dr. Priestley, that plants absorb carbonic acid gas, and after assimilating the carbon to their own bodies, exhale from the leaves the oxygen with which the carbon was combined, proves to us how necessary to each other's existence plants and animals are, and gives us an impressive lesson of the wisdom which has thus bound the several parts and systems of the universe as it were so intimately, that not a link of the chain can well be dispensed with.

For the Farmers' Cabinet.

Premiums on Crops.

The committee appointed by "the Philadelphia Society for promoting Agriculture," to examine certain crops designated for premiums, Report,

That they award to Mr. Isaac Newton, of Delaware county, the premium of $15 for the best crop of Indian corn on not less than five acres. He having raised 145 bushels of ears per acre on 6½ acres.

For the best crop of potatoes on not less than three acres, they award to Mr. James Gowen, of Mount Airy, the premium of $15. He having grown on five acres 1000 bushels of large and superior Mercer potatoes.

For the "best crop of parsneps, not less than one-quarter of an acre," they award the premium of $10 to Mr. James Gowen. He having raised, on five-eighths of an acre, 480 bushels, at the rate of 768 bushels per acre.

For the best crop of carrots, on not less than one-quarter of an acre, they award the premium of $10 to Mr. James Gowen. He having grown, on seven-eighths of an acre, 600 bushels, at the rate of 688 bushels per acre.

In addition to the heavy crop of corn grown by Mr. Newton, he also raised in the same field amongst his corn, 50 bushels per acre of very fine Mercer potatoes, and a large quantity of pumpkins. Had the ground been entirely devoted to the corn crop, it would no doubt have been more abundant. But taking all together, the yield from the field was very great, and reflected great credit on Mr. Newton for skill and good management.

The committee take pleasure also in bearing testimony to the beautiful appearance of the different crops on the farm of Mr. Gowen at the time of their visit; the great regularity with which they grew, their cleanliness and healthful appearance, were convincing proofs of the great skill and care bestowed on them by the cultivator.

In conclusion, the committee cannot but express their regret, that there should have been so few competitors in the field engaged in such an honourable and praiseworthy contest—that of trying who could do the most good for their country.

Aaron Clement, }
Isaac W. Roberts, } *Com.*

Philadelphia, Dec. 29, 1841.

Gentlemen,—Agreeably to usage, I beg leave to present a statement of the culture and product of certain root crops grown on my farm at Mount Airy, in the season of 1841. Such of them as come under the class for which premiums were offered by "the Philadelphia Society for promoting Agriculture," I submit to the society, through you its com-

mittee, for such distinction as your judgment may see fit to award.

Potatoes.—The field in which these were planted was intended for corn. Late in the season of 1840 it was ploughed, but the frost and snow setting in before finished, left the remainder to be ploughed as opportunity might serve, which was done in January, during a thaw. The thinness and poverty of the soil led me to abandon the idea of corn, and to substitute potatoes, in hopes the crop would pay for the present labour, and the succeeding crops of grain and grass remunerate for the manure applied to the field. But to this there were obstacles. The stiff old sod laid down was not rotted, and owing to the frost, and the stones which lay in several places very thick and near the surface, the ploughing was by no means deep enough. Then to cross-plough would throw up the old sward to the top; to not do it, would leave the stones in possession, without soil enough to cover the potatoes. I concluded upon a thorough ploughing. Accordingly as soon as the frost was out, I started to cross-plough, with an extra hand to follow the plough with crowbar and grub, to take out the stone. This performed, the harrow was put in requisition to tear the sods, but with little effect, they were only a little shaken and brought to the surface. The roller was applied with the view of making them compact, so that when I began to plant they might cut into furrow; but in this I was disappointed, for in the latter part of April, when the planting took place, the sods yielded before the plough, pushing on all sides, so that when the potatoes were planted the field presented a rough surface of sod of various hues, black, brown, and green—the green predominating. Some of my neighbours, who I fear forgot their own work in the interest they seemed to take in mine, encouraged me to *hope at least for a good crop of blue grass.* Appearances, I confess, were rather favourable to their views. The soil was finely pulverized and well manured. The frequent heavy rains had embedded the grass roots, and the cool moist weather was favourable to their vegetating. By the middle of May, before the potatoes were up, there were several fine dry days—cold winds and scorching suns—from 11 A.M. till 3 P.M. the sun was terrible. The harrow was started occasionally at these periods, and the grass disappeared instanter in the withering sun. A cleaner patch of about five acres of potatoes, during all their growth, could nowhere be seen.

The soil light sandy, parts approaching to sandy clay, all intermixed with mica. The manure was stable yard, applied broad-cast, with 50 bushels of lime to the acre. The seed was the Mercer of my own raising. They were not worked with the plough. About two acres first planted between the 22d of April and the 1st of May, was dressed but once with the cultivator, the remaining three acres planted from 1st of May till 5th, had two dressings; and a ridge or pitch of a hill in this section was once hoed by hand, to deepen the earth around the plants, to protect from drought. These three acres, I have no doubt, yielded 250 bushels to the acre. The whole patch, not quite five acres, yielded over 1000 bushels large potatoes of a superior quality for table use.

Parsneps.—40 rows of sugar parsneps two feet apart—in length 384 feet; about five-eighths of an acre, sown on the 17th of May by hand, produced 480 bushels—at the rate of 768 bushels to the acre.

Carrots.—50 rows of carrots two feet apart—length 384 feet; about seven-eighths of an acre, produced 12 to 13 bushels to the row—assuming 12—product 600 bushels, at the rate of 688 bushels to the acre. These were sown on the 17th and 18th of May.

Sugar Beet.—1¼ acres of sugar beet, sown on the 19th and 20th of May, in rows two feet six inches apart—yield only 830 bushels. This was owing to the severe drought between the 18th and 24th of June, which, for severity, while it continued, has no parallel in my recollection. The beets encountered this when they had made their first rapid growth. After they had partially recovered, a violent tornado of wind and hail tore them to tatters—the next growth of leaves were devoured by the caterpillars.

Turnips.—About six to seven acres of turnips, sown broad-cast with orchard grass and clover, on the 10th of August. The heaviest rain of the whole season was on the night of the 10th—it was a perfect deluge, and did great injury to my newly-sown field, yet I gathered upwards of 3000 bushels of the finest turnips, and left the field as finely set with young orchard grass and clover as any one could desire to see. The land on which the turnips were sown was under corn last year in part—about two acres in turnips after hay.

The ground in carrots, parsnips, and beets under same culture last season—manure broad-cast, soil sandy, with much mica. Manure did not exceed the quantity which would be required for potatoes.

RECAPITULATION.

Potatoes herein described, 1,000 bushels Do. another patch, 500 "	1,500
Parsneps	400
Carrots	600
Beets	830
Turnips	3,000
Total	6,330

Land employed in this culture, 16 acres.
Equal to 169 tons, 11 cwt., 8 lbs.

EXPENSE OF CULTURE.

Potatoes.—Every farmer knows the expense of this crop.

Parsneps, ¼ acre. Manure, $75 00; ploughing, harrowing, &c., 8 00; thinning, weeding, gathering and topping, 30 00..... $113 00

For ¼ acre.
If the 480 bushels be worth 50 cts. per bu. $240,
The profit would be..... $127 00

Carrots, ¼ acre. Manure, $100; ploughing and harrowing, 10; thinning, weeding, gathering topping, 45 days, 45 ..... $155 00
If the 600 bushels be worth 50 cts. per bu. 300 00

The profit on ¼ acre would be.....$145 00

Beets, 1½ acre. Manure, $150; ploughing, &c., 15: thinning, weeding, and gathering, 39 days, 39..... $204 00
If 830 bushels be worth 25 cts. per bu. 207 50

The profit on the 1½ acre would be $3 50
But this crop is no criterion—1500 bushels would be a fair good crop.

Turnips, 6 to 7 acres. The ploughing, harrowing, and manure were mainly for the grass crop to come. But suppose we charge turnips, $150; gathering and topping 75 days. $225 00
Then if 3000 bushels be worth 20 cts. per bushel..... 600 00

Profit on these 6 to 7 acres..... $375 00

Assuming then that on the 1500 bushels of potatoes would be 25 cts. profit per bushel	$375 00
Profit on parsneps.....	127 00
" carrots.....	145 00
" beets.....	3 50
" turnips.....	375 00
	$1,025 50

It is but fair to remark, that the working of these crops was heavy and sometimes vexatious—few farmers could accomplish it, for it is mainly performed about the time of hay harvest—say thinning and weeding of the roots. You took a fair estimate of it on your visits, and I believe you feared I never would accomplish all; I did it however in good season, and I am sure you will be willing to allow, from your former knowledge of my practice, that *it was well done.* In addition to this, I cut and housed some fifty acres of hay and three acres of rye. This, with the care of some 50 head of cattle, and as many hogs, you will say was business enough for the time being. But this is not all. I manured and sowed some 20 to 25 acres of rye in the midst of a wood in Cheltenham township, Montgomery county, and sowed the five acre field where the potatoes grew with wheat. That is, putting in thirty acres of grain, and gathering all the roots which are herein described, and which you have seen growing. My next ambition in farming will be, if Providence spares us, to show you the field of rye in the woods next summer—to point out what was its condition in 1838, and the practice that obtained in bringing it to the perfection I hope it will present to your experienced eyes, and the expense incident thereto. Very respectfully and sincerely,

Your friend, JAMES GOWEN.

MESSRS. ISAAC W. ROBERTS, AARON CLEMENTS, } *Com.*
Mount Airy, Dec. 11, 1841.

[Read before the Society, and ordered to be printed.]

For the Farmers' Cabinet.

Attraction and Repulsion.

SOME years ago a friend put into my hand a very small book on a most interesting subject; I was so struck with much of the theory contained therein, that I was induced to take extracts from portions of it, and feel a desire to hand them to you for insertion in the pages of the Cabinet. The title of the book, of which I have never since heard or seen a copy, is as follows—"A new Philosophical Theory, to prove that Gravitation and Caloric are the sole Causes of every Phenomena in Nature; with a Practical Application to Vegetation and Agriculture. By John Sellon."

The present article is confined to the introduction of the Theory—its application to the "process of vegetation" may follow in a subsequent number of your interesting work.

V.

"*Introduction.*—It has been long since demonstrated, that all the particles of matter composing the universe are constantly and mutually drawn each to the other by a power called attraction, or gravitation. Now, if there were nothing to oppose this power, the universe itself would be drawn into one dead, inanimate, immovable mass. It is necessary then to existence that there should be some *antagonist* to this power; and it has also been discovered that attraction is uniformly opposed by an agent, the nature of which has been illustrated by numerous experiments, and which has been termed *caloric.* All things then are held together by attraction, and caloric is the sole antagonist which opposes this power. In all the numerous experiments which have been made on this subject, there has never yet been discovered *one exception* to this general rule.

From this fact follows the self-evident conclusion, "that the powers which thus keep in existence all creation, must be the primary agents employed by the Supreme Being in every operation of nature; that they must be the principle of vegetable and animal life, and by means of caloric counteracting gravitation, every process in nature is carried on:" so that the most stupendous, the most minute, the most complicated as well as the most simple operations of nature are effected by these two agents, and these only.

Gravitation.—As gravitation influences all the particles of matter equally, it must be exerted in all bodies with greater or less power, proportioned to their specific quantity of matter. And it follows, that it operates with increasing force as the particles approach each other, the power increasing in the ratio of the squares of the distance; thus, if a body falls from the distance of two feet from the

ground, and should descend the first foot in four minutes, it would fall the next in one minute: it is upon this universal law that many of the remarks and experiments which follow are grounded.

Caloric.—Chemists have discovered that this subtle agent pervades all nature, and constantly opposes gravitation; it is omnipresent, exerting as great influence in the minutest as in the most stupendous wonders of creation; it may be collected from all parts of the material world, and rendered evident to the senses; it cannot be subject to gravitation, for every experiment tends to prove that its particles are mutually repellent.

The world then is composed of *matter* (the particles of which attract and are attracted by each other) and of caloric (the particles of which repel and are repelled by each other); but the particles of matter attract and are attracted by caloric, and those of caloric attract and are attracted by matter—from these principles, universally known and allowed, the following facts appear to be clearly deducible.

From the mutual repellency of the particles of caloric, it is plain that they must have a constant tendency to diffuse themselves equally over all space; so that were there nothing to oppose this repellent power, they would be present everywhere in equal quantity; but as this repellency is uniformly counteracted by gravitation, they exist in larger quantities in those bodies where the power of gravitation is so far overcome as to leave more space between their particles than in those which are in greater subjection to this power, and consequently have less space; but as the power of attraction increases as the particles approach, and decreases as they recede from each other, in the ratio of the squares of the distance, the power necessary to overcome or counterbalance it must vary according to the same proportion; therefore if it required a power as twenty to separate to any given distance particles within each other's attraction, it would only require a power of thirty-five to place them at a double distance.

From hence it is plain that a much greater power is necessary to balance attraction in denser bodies than in those of less density: and though in two bodies of unequal densities, *weight for weight*, the *least* dense will contain the largest quantity of caloric, yet *space* for *space* the *densest* will contain considerably the most; thus a *pound* of cork would have in itself more caloric than a pound of lead, because it would contain more space between its particles, but a *square inch* of lead would contain much more than the same *space* of cork, and of course in a more compressed state, because the particles of the lead being held together by a stronger power of attraction than those of the cork, it would require a proportionably greater power of caloric to counterbalance attraction in the lead than in the cork. As the particles of caloric are thus mutually repellent, they are regulated by the same law which holds good in all elastic bodies, and exert, when compressed, a greater force of repellency in proportion to the compression; and as the power of attraction increases in the proportion of the squares of the distance, so the repellency of caloric increases in the proportion of the squares of the compression: so, if we compress any quantity of caloric into half the space which it formerly occupied, its repellency will be thereby increased four-fold; thus exactly tallying with the increase of attraction in matter. If then any quantity of caloric is sufficiently compressed to cause the repellency of its particles to overcome the attraction by which they are drawn towards matter, it will fly off in rays through the surrounding medium, and that with a greater or less degree of force, proportionate to the compression which it has undergone. These are the most obvious properties of caloric, all arising from the power of repulsion exerted by its particles. We see then that the particles of matter *attract*, and those of caloric *repel* each other: and thus, though they mutually attract each other, the repulsion of caloric opposes the attraction of matter, and the attraction of matter opposes the repulsion of caloric; and that the repellency of one and the attraction of the other are regulated by the same principle. Upon this simple arrangement depend all the infinitely varied, and seemingly complicated processes of nature."

For the Farmers' Cabinet.

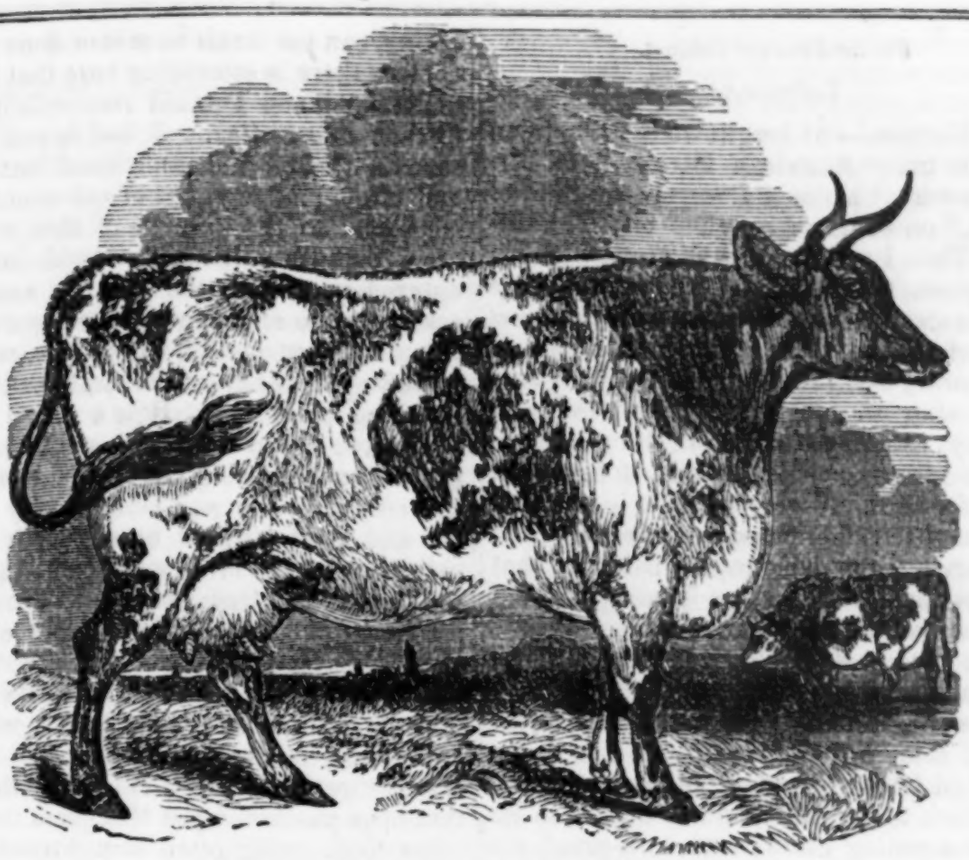
The Soiling System.

Mr. Editor,—In reference to the soiling system I have heard a fact stated which I have not seen noticed in any publication, viz. that clover fields that are not pastured in the fall invariably suffer from the frost, especially in open winters. The reason given is, that the treading of the cattle makes the surface of the soil more compact, and consequently the clover roots are better protected. An instance has been named to me of two adjacent lots, of which one was pastured and the other not, in which the difference in the crops was equal to 100 per cent. in favour of the pastured lot.

It is also said here, that in fields not pastured the mice do great injury to the clover roots in dry seasons; but that the vermin will not burrow where cattle tread frequently.

I should like to hear the experience of some of your numerous readers in these matters. Yours, &c. X.

York Co., Pa.



THE IMPROVED YORKSHIRE COW.

TWENTY years ago the Yorkshire Cow was, compared with other breeds, as great a favourite in the London market as at present. She then yielded more milk in proportion to the quantity of food consumed than could be obtained from any other breed, but when turned off to fatten, it took a long time to get much flesh upon her bones. By a single cross with the improved short-horn, and going immediately back to the pure blood, a breed has been obtained that has lost but little of the grazing properties of the new, and retained almost undiminished, the excellencies of the old breed for the pail. The above is a fair specimen of one of these valuable animals—the character of the Holderness and Durham beautifully mingled—good for the pail as long as she is wanted, and then quickly got into marketable condition. She has a long and rather small head, the eye bright, yet with a peculiar placidness and quietness of expression; the chops thin and the horns small. The neck thin towards the head, but soon thickening, especially as it approaches the shoulder. The dewlap small, the breast far from narrow, projecting before the legs; the chine fleshy and inclined to fullness, the girth behind the shoulder deep, and the ribs spread out wide, each projecting farther than the preceding one, to the very loins, giving—if after all the milch-cow *must* be a little wider below than above—as much breadth as can possibly be afforded to the more valuable parts. She is well formed across the hips and on the rump, with greater length there than the *milker* generally possesses. The legs neither long or short, the thighs thin, with a very slight tendency to crookedness or being sickle-hammed behind; the tail thick at the upper part, but tapering below, with a mellow hide and rather coarse hair. Large milk-veins, which, although the milk-vein has nothing to do with the udder, properly speaking, its office being to convey the blood from the fore-part of the chest and the sides to the inguinal vein, yet a large milk-vein certainly indicates a strongly developed vascular system, favourable to secretion generally, and to that of the milk amongst the rest. The udder is large in proportion to the size of the animal, and sufficiently capacious to contain the proper quantity of milk, but not too bulky, lest it should thicken and become fat and fleshy; the skin of the udder thin, and free from lumps, the teats of moderate size, and at equal distance from each other every way, and of equal size from the udder to nearly the end, running to a kind of point; for when they are too large near the udder, they permit the milk to flow down too freely from the bag and lodge in them, and when too broad at the extremity, the orifice is often so large that the cow cannot retain her milk after the bag begins to be full and heavy; the udder being of nearly equal size before and behind, or if any difference, broader and fuller before than behind. The quantity of milk given by such a cow is very great, it being by no means uncommon to amount to 30 quarts per day, while 36 quarts have been taken, the average being from 22 to 24 quarts per day.

For the Farmers' Cabinet.

Lucerne.

Mr. Editor,—At length we have mention made in the "American Farmer," of Mr. Beltzhoover's "patch of Lucerne, the third of an acre," on his farm near the city of Baltimore. This, I presume, is the crop which we were given to understand some two years ago, was about to be cultivated, with the view to ascertain the value of its pretensions in this country—a small affair, truly! particularly after so much has been said, and so many estimates made of its enormous yield in other countries, where it has been known for ages. Nevertheless, it is a "fact" that has been fabricated amongst us, and is deserving the honourable mention that has been made of it in the leading journal above-mentioned, the editor of which says:

"We have paid a flying visit to Mr. Beltzhoover's farm, where we have had the pleasure of seeing a patch of about a third of an acre (of Lucerne) and was pleased to learn that it had fully realized the highest expectations which that gentleman had formed of its value as a soiling grass; and as a proof, we were pointed to an additional patch which had been sown this fall, the which, if we were not opposed to croaking, we would say we fear its setting was delayed too late. We learned that the first patch to which we have alluded above, afforded five or six cuttings the present spring, summer and fall, yielding well at each cutting. The advantages of an acre or two of this grass upon a farm, to be used as green meat for the working horses and milch cows, we think cannot be too highly appreciated, and we would again urge upon our brethren to make the necessary arrangements this winter, to set a small quantity of ground next spring with it."

Now, I cannot but look upon this account, although it is the result of only a flying visit, as somewhat singular and very curious: here is a crop that has fully realized the highest expectations of its owner, still circumscribed to *two patches*, perhaps less than the one-half of an acre, although it is admitted, that one of the patches yielded five or six cuttings for soiling during the past summer; the worthy editor himself, considering that an *acre or two* of this grass upon a farm would be an abundant supply for the work-horses and milch-cows, and, urging his brethren to set a *small* quantity of ground with it in the spring. With the satisfactory proof of such perfect success before his eyes, would it be more than reasonable to expect to hear him advocate its cultivation to the extent of twenty or thirty acres, rather than to one or two; and instead of recommending a *small* quantity of ground to be appropriated to its growth the next spring, can too much be said or done for it? I confess there is something here that I cannot understand, and I would respectfully ask for further information. I had hoped that so soon as it had been ascertained that the soil and climate of any part of our country were congenial to the growth of this invaluable crop, that its cultivation would have been entered upon with the greatest avidity, for, assuredly, no crop can at all compare with it for quantity or quality, whether as green food for soiling or as hay, of the most nutritious and fattening properties. It is a grand mistake to suppose that a rich soil is necessary for its growth or well-being; it is rather otherwise, the only *sine qua non* being a very dry subsoil and light surface; upon such a soil the necessary means of support can be given by temporary top-dressings of well composted manure, the chief regard being, that it contain no seeds of weeds. And if it should be found that marl is congenial to its growth, there are situations in this country where the land might be rendered of four-fold value by the culture of Lucerne. It is to be remarked, that hogs pastured upon this grass require no other food, being often slaughtered in fine condition while feeding on that alone. The culture by drilling is not to be recommended; sow the seed thickly on a clean and well pulverized soil, either in the spring, the summer, or the autumn, without any other crop; the plants will appear in a few days, and if they are not choked with weeds, will soon overspread the land, an early and frequent cutting giving them a fresh start over the weeds, and a slight harrowing after every cutting will enable them to keep it. Truly, it is strange that such an invaluable crop is still confined to patches "the third of an acre."

Joshua Loader.

"If beginning harvest a fortnight earlier enables a man to save a crop from spoiling once in a lifetime—if the improved quality of his straw as fodder for his stock allows him to plough out an acre more, or to pasture another acre of clover with feeding or fatting stock, instead of mowing it for his lean stock, every grain saved, every extra bushel of corn produced, and every extra head of stock fed, is a public benefit, as well as to himself, and is so much added to the gross produce and wealth of the country; these being, in fact, an increased return, without any increased outlay."

How much better would it have been for the country, if the time, money and attention which have been spent on fruitless political subjects, had been devoted to improvements in agriculture!

For the Farmers' Cabinet.

Delaware Lands and Cattle.

Mr. Editor,—I have ventured to give you some account of the *destructive* mode in which I have been treating a part of my farm, which, however, is nothing like so bad as much of the land in this region has been served for perhaps the last hundred years, for, would you believe it, since my residence here, I have seen on a field adjoining me, large stacks of straw burnt in the spring, to get them out of the way of corn-planting! But this course has greatly changed, and the person who did it, is now amongst the first in improving his land.

When on a tour of observation through this part of the country, you inquired what I had done for the cross-road field through which Mason and Dixon's line runs, and where you saw the clover growing so luxuriantly? In answer to your inquiry, I will state, that this farm came into my hands on the 25th of March, 1833, since which, including the corn-crop of that year, and the wheat-crop of 1841, that part of the field has produced eight crops in these nine years. In 1835 it had a partial rest in clover sown thin, only at the rate of one bushel of seed to ten acres. In 1837 it was in corn, after a wheat stubble, which had received a dressing of 33¼ bushels of lime per acre. In 1840 the field was in oats, and on the 17th of June of that year, this neighbourhood was visited by a tremendous hail-storm, which entirely destroyed the oat-crop; many of the hail-stones measured five inches in circumference. Upon sight of this, I decided upon ploughing in the oats as a preparative for wheat, which operation I commenced in a few days after, and continued at times until the middle of July, going over about seventy acres in that time. The young oats were again turned under towards the last of September and first of October, and wheat was sown on about 32 acres of the land, which yielded 430 bushels, or a little over 13 bushels of merchantable wheat to the acre. The crop was seeded with white clover early in March, at the rate of one bushel of seed to five acres of land, and the wet season of that year caused as fine a growth as I ever witnessed. The balance of the 70 acres of oats so turned under in July, I did not seed in wheat or plough it again until March following, when I again seeded the land with oats. The return at harvest was light, not being over 500 bushels, or 12 bushels to the acre, and this, upon decidedly better land than that which had grown wheat. Perhaps the failure of the oats may be accounted for in one of two ways; first, from the heavy crop of dead oats that was turned under without rolling after seeding, thus leaving the ground too light: or it might have been from seeding the same land with oats three times in succession. The same lot was then sown with clover, which looks well after following three crops of oats. I would remark, no part of this lot or field in question has had any manure worth naming since the land has been in my possession, as my stock has been small until a year or two since, and the little manure made upon the premises was generally consumed by my root-crops. I would further remark, at no season had the lot in question yielded more than an average of five bushels of wheat per acre, since it came into my possession, until the present year. You will readily perceive that owing to hard cropping, the lime had but little vegetable matter to act upon until the oats were turned under. It is to be observed, the older the oats were when first turned under, the better was the wheat, and also is the clover. But from the manner that my land has been worked and tilled, and the little return it has received in the way of manure, do you not think it deserves a better mode of treatment than it has had, at least in the "rotation of crops?"

And now, agreeably to your request, I send you a description of my cow "Yellow Flower;" and, first, as to her measurement, which I have taken very accurately. Length from head to tail six feet six inches, girth over loin six feet six inches, girth back of shoulder five feet six inches, height at withers three feet ten inches, height at hips four feet. Her quarter is long, neck long and very thin, and also thin in the shoulder, but full and round in the body. Udder round and capacious, the legs short, her body coming within 18 inches of the floor while standing. Those who are judges lay her weight under 400 pounds; so she is very small, and ill compares, in point of size and beauty, with either of those justly celebrated animals Blossom and Dairymaid, nor is she so remarkable for her deep milking qualities as they; it is for the richness of her milk that she is so conspicuous. A trial was made on the 4th and 5th of June last, and I had intended to continue the experiment for one week, but the weather was so hot, the thermometer being up to 93° in the shade, and not then having a suitable milk-house, I thought it unjust to the cow to continue it at that time longer; the result as far as made was 26½ quarts of milk the first day, 26 quarts the second, which yielded 4½ lbs. of well-worked butter—equal to 15¾ lbs. per week. She was five years old on the 10th of June last, and has brought three heifer calves, with their mother's points, but much better in appearance than she was at their respective ages, owing, no doubt, to the greater care taken of them. She is in calf by my premium bull, "R. M. Johnson," by imported Max-

well. "Yellow Flower" takes her milk and butteraceous qualities and her country appearance from her dam, whose weight when slaughtered was but 72 lbs. per quarter; but from her milk alone her owner sold eight pounds of butter every week, besides the milk and cream, &c., used in his family, a knowledge of which induced me to purchase her, which I did at the price of $18. "Yellow Flower's" sire was raised by me; he was from a cow of the Pea-Patch Island stock, owned by Dr. Smith, of the U. S. Army, sired by a first-rate Devon bull.

I have been thus lengthy in my description of the size, weight and qualities of my cow, for the reason that I hope, by care, to see her progeny turn out superior for dairy purposes to the best imported breeds of whatever country, pedigree or name: and that if this my hope should be realized, a reference to the pages of "The Farmers' Cabinet and American Herd-Book" may show that they sprang from the Little Delaware Stock. I must here state, that I was mainly induced to make the experiment with my cow, from perusing the pages of the "Cabinet," in which the portraits of the finest animals of this or any other country are to be found—need I say, that single result has amply repaid me for the cost of all the volumes of that work since its first publication? J. Jones.

Wheatland, New Castle Co., Del., Dec. 28, 1841.

Comparative Value of Hay, Vegetables and Corn.

I wish briefly to draw the attention of farmers to the value of hay, compared with other crops, for the feeding of stock. An acre of hay yields one ton and a half of vegetable food. An acre of carrots or Swedish turnips will yield from ten to twenty tons; say fifteen tons, which is by no means an exaggerated estimate. It has been ascertained by experiment, that three working horses, fifteen and a half hands high, consumed at the rate of two hundred and twenty-four pounds of hay per week, or five tons one thousand and forty-eight pounds of hay per year, besides twelve gallons of oats each per week, or seventy-eight bushels by the year. An unworked horse consumed at the rate of four and one-quarter tons of hay in the year. The produce, therefore, of nearly six acres of land is necessary to support a working-horse by the year; but half an acre of carrots, at six hundred bushels to the acre, with the addition of chopped straw, while the season for their use lasts, will do it as well, if not better. These things do not admit of doubt. They have been subjects of exact trial.

It is believed that the value of a bushel of Indian-corn in straw and meal, will keep a healthy horse in good condition for work a week. An acre of Indian-corn, which yields sixty bushels, will be ample for the support of a horse through the year. Let the farmer then consider whether it be better to maintain his horse upon the produce of half an acre of ruta-baga, which can be raised at a less expense than potatoes, or upon the grain produced off an acre of Indian-corn, or, on the other hand, upon the produce of six acres of his best land in hay and grain; for six acres will hardly do more than to yield nearly six tons of hay and seventy-eight bushels of oats. The same economy might be as successfully introduced into the feeding of our neat cattle and sheep.

These facts deserve the particular attention of the farmers who are desirous of improving their pecuniary condition. It is obvious how much would be gained by the cultivation which is here suggested; how much more stock would be raised; how much the dairy produce might be increased; and how much the means of enriching the land and improving the cultivation would be constantly extending and accumulating. But when we find, on a farm of two hundred acres, that the farmer cultivates only two acres of potatoes, one acre of ruta-baga, and perhaps a quarter of an acre of carrots, we call this "getting along," in the common phrase; but we can hardly dignify it with the name of farming. I am aware that labour of a proper kind is in many cases difficult to be procured, and with our habits, as difficult to be managed. Farming, likewise, can in few situations be successfully managed, unless the farmer has capital to employ, equal at least to one year's manure and one year's crops. A large portion of our farmers, also, from the nature of their habits and style of living, are so prosperous and independent, that they have no occasion to extend their cultivation beyond what it now is, in order to meet their wants; and to incur all the trouble, vexation and risk of employing more labour, expending more capital, and increasing their cares.

But it is not fair to produce such instances as any examples of the profit or unprofitableness of husbandry, when carried on, as all other branches of business, to be successful, must be carried on with intelligence, skill, industry, enterprise; and all the capital and all the labour which can be advantageously employed in it. I will not, however, anticipate such general views of the subject, as I propose to take in the retrospect of the whole survey.—*Coleman.*

What constitutes the wealth of the country but her cotton, hemp, sugar, rice, tobacco, wool, wheat, beef, pork?

For the Farmers' Cabinet.

French Theory of Renovation.

On the first publication of the French Theory of Renovation, many persons were prepared to treat the system with ridicule, and others expressed their contempt for a notion so perfectly irrational; in a little while, however, it was discovered that the thing had long been practised in this country, and that there was nothing new in it, for Mr. A. had planted potatoes on the sod and covered them with straw, and Mr. B. had allowed his crop of grass to fall and rot on the ground, thus to replenish the soil at a trifling expense, &c.; and all had benefited amazingly by a system, which the French seem to have an idea has something original in it. Now, whatever may be the result of experiments making in many parts of the country, to ascertain whether wheat can be brought to perfect maturity merely by sowing the seed on land unploughed and undressed, and covering it with a portion of the last year's crop of straw—to say nothing of the rationality of the attempt to raise it on a *pane of glass*, thus preventing entirely all communication with the earth, it must be permitted me to say, I consider the subject as bearing most favourably on the system of top-dressing in general, a system which a few years ago would have been scouted as the *most* irrational and wasteful that could be devised, by which the tiller of the soil would incur a loss of more than half his manure, by permitting the winds of heaven to dissipate those *elastic gases* which are continually arising and flying off by their levity, little dreaming of the present theory and very prevalent belief, that the gases which are alone valuable, are those which, by their density, are confined so near the surface as to be always within reach of the plants growing thereon; while those of a more volatile nature, which are not taken up and held as it were in solution by the denser gases, after performing their allotted parts, are liberated, and are carried off into the atmosphere, there to form fresh combinations, and become fit again to take their station in the wonderful and never-ceasing round of Renovation.

These reflections bring to my remembrance a circumstance, the result of which I lately witnessed while on a visit to a friend in a distant county, which is, I think, worth recording as "a fact." On walking over a clover field which had then been mown the second time for seed, and the crop raked into wind-rows, I observed that a square space, about an acre, was much more thickly set, and the leaves of a more vigorous appearance than any other portion of the field, and seeing that the great thickness of the crop was marked with the exactitude of a line, I pointed it out to my friend from a distance, as the work of a bad mower, who had left a part of the crop on the land, not having cut "the bottom half inch;" but on a closer inspection I could perceive that the line ran *across* the swathes, and not *with* them; so that this could not be the cause of the very great difference in the appearance of the crop, which was found to proceed altogether from a closer plant of much more vigorous growth; on which my friend remarked—"The clover-seed with which this field was sown was saved by myself, was carefully cleaned in the barn, and taken immediately from thence and sown in the field; but my seeds-man scattered it too plentifully at first, and the consequence was, the clean seed was all exhausted and the square which you see was left unsown; but not being willing to leave this portion of the field without a crop, and having no seed at hand, I took the clover-chaff from the barn and scattered it very thickly over the unsown portion of land, thinking there might be a few seeds contained amongst it; and you now see the result, after two crops of far heavier bulk have been removed from the spot before us." Here was an exemplification of the French theory before our eyes, as well as an *open volume* in favour of top-dressing, and I thought I could not do better than appropriate a leisure half-hour to the detail of the fact, for the amusement, perhaps the information and benefit, of the readers of the pages of the Cabinet.

Jan. 22, 1842. R. Clayes.

For the Farmers' Cabinet.

The Bee-Hive.

We often hear it said that bees will not work downward—that it is contrary to their nature—but an English Journal informs us that a Mr. Jeston recommends this mode in preference to that of raising the boxes—he says, "I place a board, half an inch in thickness, and 18 inches square, perforated with two holes an inch in diameter, over a butter-tub, and upon that place the hive as early as March, as the bees have a great dislike to any disturbance of their arrangement. I last year took upwards of 40 lbs. of honey in this way, and left an ample supply for the swarm to subsist on during the winter, although the season was remarkably bad. And in this way have I carried off the prizes for honey at the Henley Horticultural Society for the last four years. This plan will prove a good substitute for the modes of 'rearing' according to the usual custom; it has the advantage of obtaining a supply of honey from the strong *swarms*, as well as from the old hives." The time will soon be at hand to make the experiment.

John Ellis.

To the Editor of the Farmers' Cabinet.

Delaware Lands.

Sir,—I am informed that the people of Pennsylvania have received a very wrong impression in regard to the healthfulness of the state of Delaware. A very respectable gentleman of Philadelphia recently told me "he was very much surprised to find such fine lands in Delaware." He expected, from what he understood, to have found it a complete frog-hole; enough to give any man in good health the chills to look at. How extensive such impressions are, I know not; but from what I can learn, they must be considerable, and operate to deter capitalists from investing their money in some of the best lands to be found in the United States.

Now sir, it is the duty of some one, to put the public right in this matter; and as you have lately made us a visit, and had an opportunity to see and form an opinion for yourself, may we not expect to hear from you, through the columns of the Farmers' Cabinet—for who so proper, so disinterested or unprejudiced, and therefore, to be implicitly relied upon? And here suffer me to say what I *know*—I purchased the farm where I now live, four years ago, and the spring following, moved my family from Connecticut on to it. Having always resided in that state, breathing its pure air, and drinking the delicious waters that flow from its granite hills, I could but expect we should suffer from sickness before becoming acclimated; but I have been most agreeably disappointed. The health of my family has been uninterrupted, except in one instance, and that I attribute to extreme imprudence. I could not expect to enjoy better health in any part of the globe. Since removing to Delaware, the average number of my family has exceeded twelve, and not an individual residing upon the farm has had a chill. You must not infer, that I consider all other parts of the state equally healthy. Like other states, while some parts are healthy others are not so much so, or, in other words, where the lands are high and the water pure, it is healthy, and *vice versâ*. I have been in the east and west, north and south, and know of no place where money can be invested more pleasantly and profitably than in Delaware.

Yours and the public's humble serv't.,

Elijah A. Bingham.

St. George's, Jan. 8th, 1842.

We very cheerfully respond to the call of our correspondent, and feel pleasure in saying, our late visit to that part of the state from which he hails, was in every respect agreeable and very instructive. From all that we saw and heard, we do not hesitate to pronounce that part of the country healthy, and peculiarly adapted for the permanent residence of the agriculturist, be his system of management what it might. With a surface sufficiently undulating to carry off the superabundant moisture, and level enough to form a real *sporting country* for the plough, we can safely recommend it as being, in our estimation, one of the most desirable locations for the man of science and capital, anywhere to be found. Our correspondent's statement concerning the health of himself and family, stands in singular juxtaposition with another account of the health of the same individuals, as related to us in conversation with a friend residing at Salem, New Jersey—which place is situated just on the opposite side of the Delaware, and almost within sight of their residence! The remarks passed in the way of dialogue—

W. How is the health of that part of Delaware which you have been visiting; is it better now than it has been?

P. I did not hear of a single case of sickness of any kind, during the ten days I have spent there.

W. I understand the bilious fever has been very bad there, and that an eastern family by the name of Bingham, after a residence of about four years, during which time they have all been suffering with the fever and ague to such a degree that their neighbours have been constrained, out of pity, to plough and sow their lands, are preparing to return to Connecticut, never having enjoyed their health in all that time.

P. I spent the last evening with them, and never did I see a more healthy family—they are the pictures of health; and I heard them declare that no persons ever enjoyed a greater share of that blessing than they had done, during the whole of their residence in Delaware. On the subject of the general health in that part of the country, I can only say, a physician called one morning at the house of the person with whom I was staying, to ask if any of the family wanted the doctor! and on my remarking, I considered such a circumstance as speaking volumes in favour of the health of the country, he declared that he had not had five cases of bilous fever for the last year, and as for losing a patient, he could scarcely remember such a circumstance! adding, "The country has been distressingly healthy for a great length of time." — Ed.

Murrain among Cattle.

Within the last 12 months, cows and oxen have suffered very severely in various parts of England, insomuch that many small graziers and dairymen have lost their whole stock. This disease was at first considered to be only epidemic, but the veterinary surgeons throughout the country have pronounced it to be highly infectious, and the consequence has been that cattle affected with the above malignant disorder have been very properly kept apart from those which were healthy and sound. A gentleman residing near Plumsted, by way of experiment, caused the cows on his estate to be inoculated with the *vaccine virus* (pus), which appeared to operate as a preventive to the malady, for although his neighbour's cattle were dying around him in all directions, not one of his cows (seven in number) evinced the slightest symptoms of murrain.

For the Farmers' Cabinet.

Proper Application of Putrescent Manures.

The formation, preservation, and proper application of putrescent manures are justly considered subjects of paramount importance to the agricultural interest of our country. Much has already been written on the subject, but it is to be regretted that there are so many different opinions among farmers both theoretical and practical, particularly with regard to the latter branch of the subject—proper application of manures. I propose, Mr. Editor, to submit a few observations upon the subject of whether it is better to apply manures to the surface or to bury them in the soil.

Within a few years past the farmers in this neighbourhood, with but few exceptions, as far as my knowledge extends, have come to the conclusion that the proper application is to the surface, and some of them think they have thrown away many dollars by burying it in the soil. It has generally been supposed that the application to the surface was in opposition to chemical science: but with all due deference to the great names which have appeared on the opposite side (such as the lamented Buel of Albany), I think that theory and enlightened experience may be made to agree upon this subject, and that it can be shown that the present state of the science of chemistry does not militate against the practice for which I contend.

It is well known that vegetables in the act of decomposing, or, in other words, *manures in the act of rotting*, form new compounds, which are carbonic acid, water, carbonic oxide and carburetted hydrogen. The two former are the chief results of the decomposition. The two latter are formed more sparingly, and chiefly when there is not a sufficient supply of oxygen to the substance undergoing decomposition. If the manure is buried beneath the soil, it is prevented from having access to the oxygen of the atmosphere, and consequently more carbonic oxide and carburetted hydrogen are formed, and less carbonic acid and water. If the manure is placed on the surface, being always in close contact with the atmosphere, the supply of oxygen is plentiful, much carbonic acid and water are formed, and little carbonic oxide and carburetted hydrogen. Now it is well known that carbonic acid gas is the most fertilizing of all the substances formed, and its base enters largely into the composition of all plants, consequently the more there is formed the greater good effects will be produced by the decomposition of the manure.

But perhaps an objector will say, all the gases which are generated beneath the surface are prevented from becoming dissipated and are retained for the use of the plant, while what is generated on the surface flies off and is lost. If these were facts, they would be unanswerable; but chemistry teaches us a different lesson. Carbonic acid gas is nearly half as heavy again as atmospheric air, and consequently all that is produced penetrates the surface of the soil, or remains in close contact with the surface, and is taken up when wanted both by the roots and leaves of the plants; while the carbonic acid gas, which is generated beneath the surface, will not rise (for the reason just given), but is soon carried below the place in which it is deposited, by the rains, out of the reach of the roots of plants, and is thus in a great measure lost.

The carburetted hydrogen, it is true, is retained beneath the surface, otherwise it would fly off, being lighter than atmospheric air, but as it is believed to be less beneficial than carbonic acid, an actual loss of fertility is sustained by its formation when the latter could have been formed in its stead by the surface application.

The above reasons would also seem to prove that all putrescent manures should be applied in their unfermented state, as the carbonic acid gas is produced during fermentation, which I believe accords with the experience of our best farmers on this subject.

We are all aware of the great advantages which a crop sustains, in time of drought, by having the surface of the ground kept open by repeated workings. I believe this has generally been accounted for by supposing that the earth thus took up more moisture in the form of dew during the night. In addition to this, might not the carbonic acid which is always found ready to penetrate the surface (owing to its specific gravity), be thus enabled more readily to enter the soil and become one of the principal, if not the most important substance for the nourishment of the plant? B.

Jan. 8, 1842.

Close Planting.—A Scotch farmer residing in the town of Sodus, Wayne county, N. Y., informs us that he raised, the past season, 400 bushels of Indian-corn on four acres of land, notwithstanding the dryness of the season. He attributes his success mainly to his manner of planting, and thinks farmers generally plant too thinly. His mode is to plant in rows three feet apart, and drop two grains in a place only 15 inches apart in the rows. The variety used is the Red Blazed Flint. The soil is sandy loam, and 100 loads of manure were put on the four acres. The corn was ripened and cut sufficiently early to sow the ground with wheat.

The Choice.

'T is not to mortals given,
While passing through the thorny way of life,
To be exempt from ills. Only in Heaven
Is perfect pleasure, unalloyed with strife.

And had we power to choose
Our portion while sojourning here below,
No doubt the good we often should refuse,
And load our aching hearts with double wo.

This then is wisdom's part,—
To bear with patience woes we cannot shun,
Receive its blessings with a grateful heart,
And daily learn to say "Thy will be done."

Yet since you ask, my friend,
My views of life, and where we most may find
Of happiness below, I freely send
This rough-wrought transcript of a rural mind.

It matters less the place
Where life's brief visionary days are spent,
For who the way has ever learn'd to trace
That Bliss, the fugitive, her footsteps bent?

Still would I wish a home—
For rich the joys that cluster round that spot;
Let others through the world's wild desert roam—
Be home's calm pleasures my more tranquil lot.

For there are friends most true,
Hearts bound by tender and endearing ties;
Yet should the friends of home, tho' dear, be few,
And those selected from the good and wise.

The vain licentious throng,
Who love the revels of unhallow'd mirth,
Or idly drag life's tiresome load along,
Or raise no thought above the sordid earth,

These my retreat would shun
For more congenial haunts.—Yet when the care
Of busy day is past—its duties done,
I 'd joy to see some friendly neighbour there—

In converse sweet to spend
The social evening hour;—with vocal chime
Enliven the dull heart, or, reading, blend
Instruction, glean'd from every age and clime.

The gifted sons of song—
Montgomery, Milton, Cowper, Campbell, Gray—
These, and like gifted spirits, should prolong
Our social feast, and speed the hour away.

Above all books, be mine
The volume of that law from Sinai given—
The prophet's vision, and the songs divine,
The chart of the blest way that leads to Heaven.

Thro' life's short shadowy way,
Thus would I live to bless and to be blest,—
Ready at last the summons to obey,
That calls the faithful to the realms of rest.

West Troy Adv.

For the Farmers' Cabinet.

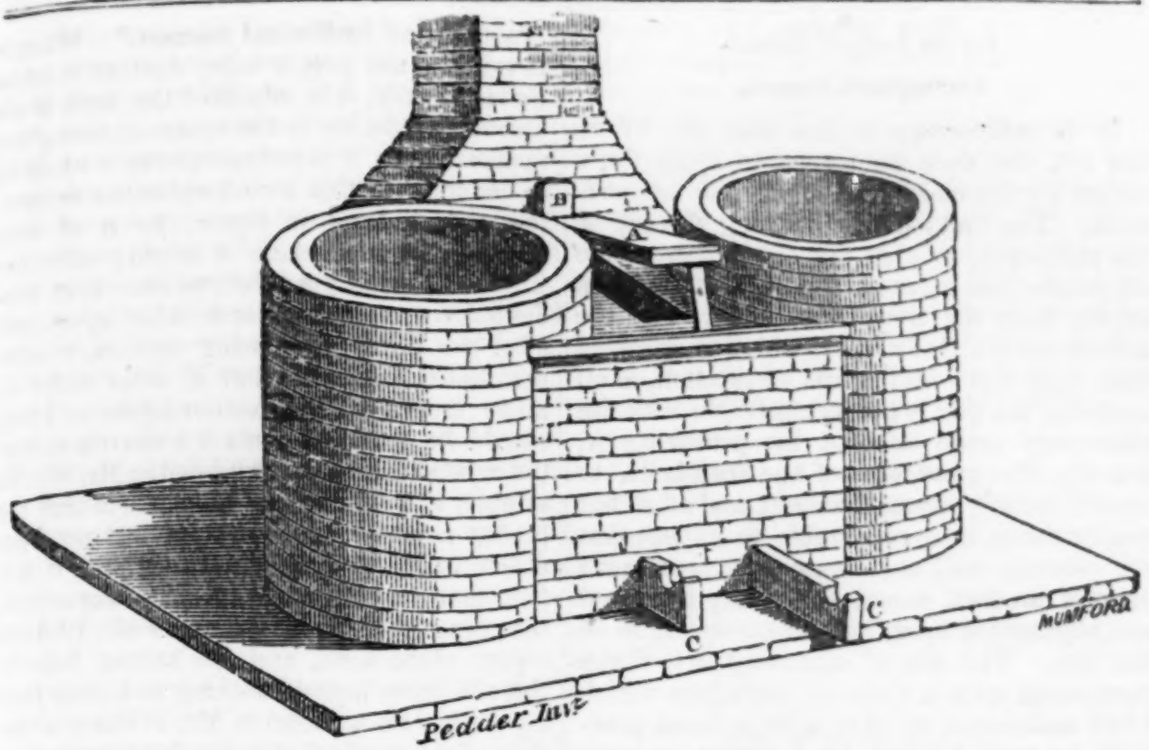
Gravel in Swine.

A farmer of Delaware county, Penn., who keeps a stock of hogs, lost one, after protracted disease in 1839, the following year three died, and in 1841 five died. So many becoming diseased, led to an examination after death, to discover if possible the cause. The symptoms in all were the same, and all those which were attacked with the disease or died were barrows or *males*. On a careful examination of those that died the last year, it was found that they were afflicted with gravel; pebbles or gravel being discovered in the bladders and in the urethra, which obstructed or prevented the passage of the urine. The result was irritation, inflammation, mortification and death. In one case the bladder was found bursted, and its contents discharged into the cavity of the abdomen. The vessels of the kidneys, and those leading to the bladder were distended with a partially indurated secretion or matter, which, when macerated between the fingers, discovered particles of a sandy character. A quantity of the pebbles or gravel which was obtained from them has been preserved. It is presumed that they are of the same character as those obtained from the human subject. It is worthy of remark, that though there was the usual proportion of females among the stock, none of them were visibly affected with the disease; in that respect following the same general law that has been noticed in the human family. No remedy has been thought of or suggested, but that of killing off the whole stock or family that has displayed such a remarkable predisposition to this form of disease, and to replace them with new recruits from different families where this newly-discovered malady has not been known to exist. In several of the western agricultural papers, a disease in swine has been the subject of numerous essays, called the "worm in the kidneys." Quere, is not the above identical with it? and is not the supposed worm the indurated secretion above mentioned? which, assuming the form of the vessel containing it, has been erroneously taken to be a worm. This suggestion is merely thrown out to promote future careful investigation and inquiry that truth may be arrived at, and should any examinations be made, it is hoped the results of them may be published in some of those very useful and valuable agricultural journals that are now so generally read by farmers. It may be remarked that the above family of hogs have long been on the farm, and have bred "in and in," consequently any defect of constitution, or peculiarity of character, has had abundant time to perfect and display itself most conspicuously without adulteration or dilution.

Agricola.

Jan. 17, 1842.

Winter Hens.—Fowls should never be kept till they are old. Young ones lay more eggs, and young ones are more apt to lay when they are removed to a distant barn than when kept where they were bred. Any farmer may pay for his newspaper for years with the proceeds of a single hen well bred to lay eggs; and one bushel of buckwheat, with a very few potatoes, will keep a hen's crop full during the winter—and two hours' labour on a suitable soil will often be sufficient, without any manure, to raise a bushel of buckwheat. Who that hath lands cannot afford to take a newspaper?—*Mass. Ploughman.*



BOILERS FOR COOKING FOOD FOR STOCK, &c.

THE above arrangement, together with the peculiar construction of the fire-place, are believed to be original in invention and novel in practice. An experiment with a fire-place without *draught-hole or grate* was first made at the sugar-refinery of Joseph Lovering, Esq., in Philadelphia, in 1837, where it was found to succeed in the most perfect manner. The fire is lighted on the top of the fuel, and is operated upon by the air from above, on the principle of the blow-pipe; by it the smoke is forced downwards through the body of the fuel, becoming ignited in its passage through the flame, and adding much to the volume of heat while passing under and around the boiler on its way to the chimney. Thus the smoke is consumed, none issuing from the top of the chimney after the fuel has become perfectly ignited—a consideration of great importance to those in the vicinity of extensive manufactories. The fuel is wood, cut into lengths to suit the size of the fire-pit, which pit may be constructed at the sides and bottom with common bricks, the arch-ways, by which the fire passes to the bottom of the boilers, being turned with fire-bricks. This arrangement is adapted for boiling or evaporating generally, and particularly for the cooking of food for stock either on a large or small scale, none being more economical or convenient for heating water for dairy use, the scalding of hogs, &c. It was at first intended to confine the use of these boilers to the desiccation of beet-juice in the manufacture of sugar, but it was perceived that the principle of operation is applicable to many other purposes, especially to the evaporation of the juice of the maple and corn-stalk in the fabrication of sugar, the power of suddenly checking the fire—as instantaneous as the turning off steam—being peculiarly adapted to such nice operations; at the same time giving the means of applying a greater or less degree of heat, withdrawing it altogether, or transferring it to other purposes, by a movement the most simple. The boilers may be made of thin boiler-iron, the bottoms nearly flat, and the sides perpendicular, with a flange turned on the top, the depth being in proportion to the circumference. In setting, they may be placed with the bottom within three inches of the bed of brick-work, the fire from the pit passing under the arch and spreading over the bottom, escaping by a passage at the opposite side, and making the circumference of the boiler before passing off by the chimney; the boiler itself being surrounded by a *jacket* of sheet-iron, of size sufficient to leave a space of one and a half or two inches, for a flue between it and the boiler; and against this the brick-work is to be built. Put the ingredients to be boiled into one of the boilers, withdraw the iron stopper C, formed of a flat bar of wrought-iron three inches wide, and light the fire, regulating the draught by raising or lowering the iron cover A, which must be made to close tight when put quite down. While this is progressing, make ready the other boiler, and when the food in the first boiler is done enough, replace the stopper, and withdraw that belonging to the second boiler, by which the fire will be transferred from one to the other in full force without receiving the least check or loss of time. If at any time it should be found necessary to withdraw the fire at once from both boilers, it may be done by drawing up the slide B, and putting in both stoppers, when the fire will pass off by the chimney; or the fire might be extinguished instantly by putting down the cover, a means of saving much fuel, by putting an end to all further combustion.

Jan. 20, 1842. JAMES PEDDER.

For the Farmers' Cabinet.

Corn-Stalk Sugar.

It is satisfactory to find that Mr. Webb has not, nor does he intend to apply for, a patent for the making of sugar from the corn-stalk. The method of collecting the sap of the palm-tree, as also the distinction which he points out between the raw juice when drawn from the tree, called toddy, and the ardent spirit called arrack, which is procured from it by fermentation and distillation, is all correct; but this is not incompatible with the customary mode adopted for procuring it, namely, the extraction of the fruit-buds, to render the sap more abundant and of richer quality; nay, it is reasonable to expect that the process, and the consequent increased yield of product, would be greatly improved and augmented by it, and which is said to be the fact. The *sin* of supposing Mr. Webb conversant with a mode of procedure which I had understood to have always been practised, he must forgive, for I meant no more than to presume he knew as much of the matter as myself. The extract which I gave was taken verbatim from an account of the process contained in a periodical then lying before me, the name of which I have missed, but I will endeavour to procure the work, and if I succeed, I will send it up for Mr. Webb's perusal: it is there plainly stated that this toddy is denominated *paviah arrack*. I am happy to assure Mr. Webb that nothing was farther from my intention than to accuse him of wilful deception; my only idea was, that he had appropriated to himself, by means of his patent—which it is very generally said and believed that he has secured—a mode of manufacture which had before been known and practised in detail—a charge that could be brought against many *improvements* for which patents are sought and obtained, without a wish to fix upon such the charge of wilful deception.

The specimen of syrup which I saw at the horticultural exhibition in Philadelphia, was labelled molasses, and was so denominated by Dr. Thompson, see p. 90 in Cab. for October. Mr. Webb says it was *syrup*, meaning that at least one process of crystallization had been gone through, and this might therefore be properly termed, in chemical language, the mother-liquor. Now when I saw it, the granulated sugar had, by the mere act of subsidence, become one-half the contents of the bottle, and I will therefore leave any one, at all acquainted with the manufacture of sugar, to say whether the operations had been effective, and the point of concentration understood or practised. Mr. Webb is in error when he makes me say, "the whole operations were evidently performed in the most ignorant and ineffectual manner." When it is said the old people were content to make molasses only, it is admitted the term is not correct, according to the nomenclature of the manufactory; it is as improper as it would be to denominate this sweet substance *syrup*—the proper term is *liquor*, be it of what strength of saccharine it might; after the first and second granulations have been conducted, the mother-liquor is called *syrup*, and after the third granulating process, it is denominated *molasses*; but if, after either of these processes, the mother-liquor or syrup should be found to contain a quarter-part of the crystallized sugar exhibited in Mr. Webb's sample, it would be fair to conclude that the proper point of concentration had not been either understood or practised; still it is a fact, that the old people did make *sugar* from the corn-stalk long before either Mr. Webb or myself were born, and we cannot help it. But if I know myself, nothing is farther from my wish than to deprive Mr. Webb of a particle of the merit that is his due: far from it; for it will give me real pleasure to hear that he has succeeded in causing the manufacture of sugar from the corn-stalk to become of more importance than that from the cane, and I trust he will favour us with an account of his progress from time to time in the pages of the Cabinet. The extreme richness of the juice of the corn-stalk arises, no doubt, from the circumstance that our climate is suited to its full developement, while the cane seldom obtains its perfect maturity in Louisiana; much of the sugar from thence is therefore *unripe*—in an incipient state—which at once accounts for the great difficulty experienced in fining their liquor. But Mr. Webb must consent to accept a medal, which is so justly his due.

J. M. C.

Eastern Shore, Maryland, Jan. 25, 1842.

For the Farmers' Cabinet.

Comparative Price of Labour.

Mr. Editor,—I find in the Ledger for the present day the following comparative statement of the prices paid for labour in different countries, which does not appear to me to be a fair criterion on which to form a judgment. It is there said, in a quotation from the Pennsylvania Inquirer, "The highest price to be obtained by a weaver, his wife and two children, in Manchester, England, per week, is 10s. 6d. sterling, equal to $2 33, while thousands of females are employed at Lowell in factories, who receive $3 25 per week."—"This, there is no doubt, is all true as stated, and it is equally true that in Texas the same labour that in Lowell commands $3 25 will command four times the

nominal amount—not that there is that difference in the value of the produce of labour, but the currencies differ to that extent. Our currency is much more valuable than that of Texas, and that of England is of considerable more value than that in circulation with us." Now, as some one says, this is all *Latin* to a plain farmer like myself, and I think it much the most satisfactory way to *lay out the money at market*, and see what it will bring in the shape of the necessaries of life; and as that has been done by a correspondent in the Cabinet, p. 362, vol. 2, in a way too plain to be misunderstood, I should like, if you have no objection, to transfer the account from thence into your present number, as many of your readers might not have seen it, while to those who have, I wish to apply for information as to the *rationale* of the thing; to me it appears clear, correct, and easy to be understood, and if it be so, is not the mode adopted a very simple way of *settling the currency!* It is there stated, in an argument on the comparative value of labour between England and America, "And now, let us put this and that together, and see if there be not some difference in favour of the wages in this country. I have hit upon a very simple plan of deciding this question: it is, to expend a man's wages for one week, and see what can be obtained for the same. I get a dollar and a quarter a day, and you do the same; to be sure we work hard for our money, but that is no hardship, as we are able; and it is a great mistake to suppose it hard to have to obtain one's bread by the sweat of one's brow, and so the magistrates think, for when they determine to punish a man severely, they send him to the penitentiary and *keep him*, without permitting him to work! Well, then, for the sum of $7 50 (a week's wages) may be bought,

A new hat	$0 75
Pair of shoes	1 00
Pair of trowsers	1 00
New umbrella	75
41 lbs. of mutton	1 25
1 " tobacco	10
1 " tea	25
1 " coffee	13
3 " sugar	21
New gown, for wife	56
An acre of free land	1 50
	$7 50

Now tell me, is there any other country in the world where this can be done? Why don't you speak? I will leave you to lay out the wages for a week, such as we used to receive in England, for they are so small that I fear if I were to attempt to handle them, they would *slip through my fingers.*"

The wages here alluded to were, for a single man, per week, $1 20, a married man with wife $1 56, do. with three children $2 04! not more than the price of a pound of tobacco, or a pound of snuff, or *a quart of French brandy.* I have added to the account sixteen pounds to the quantity of meat to be purchased for $1 25; for I sold, the last week, a fore-quarter of as good fat wether mutton as was ever butchered, for three cents per pound, and a fine calf's head for 12½ cents. Now, although I do not pretend to know much about *currency*, I do not think it necessary for a man to understand *Latin* before he is enabled, by putting "this and that together," to see that of no country under heaven can this be said but of America. J. Dalton.

Jan. 1, 1842.

P. S. Must not a man be *blind* not to see that the difference between the state of things in England and America is simply this:—in England wages are low, and the necessaries of life and the value of land high; in America wages are high and land and its products low?

From the Southern Planter.

Leaf Manure.

I am pleased to see several recommendations in your paper of the use of leaves and wood offal for compost, and particularly do I admire Mr. Lownes's idea of a horse-rake for collecting wood trash. My experience has fully satisfied me of the profit of hauling into my farm-yard vegetable matter from my wood-land, but experience has also taught me that it will never do to rob the wood-land of this, the sustenance of its growth—in other words, this nutritious substance is as much needed for the growth of trees as for the growth of corn, and you can only afford it to the one at the expense of the other. I know that I completely impoverished a very valuable piece of wood-land by the annual removal for several years of the fall coating of leaves, whereby nothing was left to restore the depletion caused by the growth of the succeeding summer. My plan now is, to haul in only the undecomposed vegetable matter of the land I am clearing, for when the growth is stopped, the food may be taken away for other crops. But even here, if I am about to cultivate the cleared land, I am careful to remove no mould, since it is certainly better to plough it under than to carry it to the farm-yard for the purpose of bringing it back again. Whilst undecomposed matter may be profitably removed from the surface of land on which there is no growth, I think a very erroneous and common opinion exists and is increasing, that an indiscriminate removal of wood-compost may be advantageously made; and it is to do away this impression, and afford to others the benefit of my experience, that I offer this communication.

E. W.

To the Editor of the Farmers' Cabinet.

Draining.

Sir,—Desirous of understanding the correlative branches of farming, without which mere ploughing and sowing, and the application of manure, whether calcareous or fermented, or whether ploughed in or employed as a top-dressing, would be fruitless; one of these branches closely connected with, and, in my view, the most important, being the art of draining. Having recently, by fortuitous circumstances, been thrown upon a farm that was proverbial in the neighbourhood as having been worn out—but I am inclined, however, to think it more from the effects of water than from exhaustion by cropping, although the withering consequences of both are to be seen—I examined the land and moved on to it at midsummer, and in the autumn and spring following found the land, that is the principal part, completely flooded with water, and where, in the summer, every thing was thoroughly scorched and dry as tinder, being covered for the most part with *sedge and fog*.

The bearing of the valley in which the land lies is nearly east and west, and the hills on the north and south are pretty high, to the north quite so. Being anxious to take the most speedy and direct means for the renovation of the soil, and for its restoration to its primitive state of fertility, although naturally not very deep and fertile, yet capable of sustaining good crops: and from the many well-written essays on the subject of "draining," which I have, from time to time, read with close attention in "The Farmers' Cabinet," and from what I had conceived to be the philosophy of vegetation, I at once determined, in my own mind, that draining was the remedy to be applied, and thought it would be as easy in practice as in theory, but in that I was mistaken, for having no practical knowledge of the art, as I think it more an art than a science, I had not proceeded far before I was brought to a stand, as my practice did not seem to meet with or correspond to the theories I had seen laid down. I began to hesitate, and stopped that part of the work, thinking it possible that as most of the success in draining we have accounts of are in England, that the same process might not tend to the same result in this country, or rather in this particular instance; not that the climate or soil could make a difference, but the position in which the strata are found lying; for I find in almost all cases where we have accounts of draining, the strata are stated as lying nearly in a horizontal position, and by penetrating to the stratum of clay with a drain, would of necessity meet the water in its downward course, and cause it to flow into the drain; whereas, if the strata of gravel and clay were found lying in a vertical position, what would then be the consequence? and that is the case in this instance of mine.

After digging the main drain down the declivity, for the purpose of leading the cross drains into it, I commenced a cross-cut above the point where the water issued, with a view of drawing the water from that point into the drain, and thus passing it off; but the effect was, that although when I cut the stratum of gravel, which I found to lie perpendicular, some water flowed into the drain, sufficient still sunk into the gravel to keep up a constant flow at the point below, yet not in so great a quantity. These are only what are called winter springs, and are perfectly dry in the summer. After that I turned my attention to a piece of low land, completely flooded the greater part of the year, and quite quaggy, so that in walking over it one would sink half-leg deep in mud and water, the surface being overgrown with rushes and coarse water-grass, the name of which I cannot give you for want of the knowledge which that invaluable paper of Dr. Darlington of West Chester teaches, "p. 75, vol. 6, Cabinet," together with the *aquatic* alder which covered the whole surface. There I have succeeded better, for having made the main drain up to a certain point, I then cut a cross-drain from it at a right angle, having sufficient fall to give the water an easy and gradual descent to the main drain, and by that operation, cut all the springs which had before found vent through the porous soil, being an alluvial deposite lying horizontally. In digging the drains, but more particularly the cross-drain, after going about two feet deep, we met with a stratum of coarse gravel intermixed with round stones, having the appearance of creek sand, which, I doubt not, was originally the surface, and where the water flowed for many years, through which we found an innumerable number of small pipes spouting up the water as through a sieve, and flowing beautifully into the drain. The alluvial soil, as before stated, about two feet deep, has, without question, been many centuries forming, for I found some large trees on the flat, which cannot, I think, be less than 500 years old.

I did not penetrate the gravel to any considerable depth, conceiving that the water, having vent at that place, would cut off the supply from the springs or reservoir, no injury could be done below, and still designing to extend the main drain further up, and again heading off the springs at a future day.

Now, Mr. Editor, I may excite the *risibles* of some of your readers by the remark, that the same process might not produce the same results in this country as in England: be it so:

I have no objection to a laugh at my expense if it has the effect to put me on the right track, and besides, I should consider the information *cheap*, for I would now be willing to hire a competent person at high wages for a few days, or even weeks, to examine the situation of the land, and direct the work with success. Whether an artificer, well skilled in the business of "draining," could find employment in this country I do not know, but if this statement should meet the eye of any one who will give directions, so that the work could be prosecuted with effect, from my attempt to describe the situation, and without seeing the land, it would oblige one, if not

MANY SUBSCRIBERS.

Manheim Township,
Schuylkill County, Penn., Jan. 13, 1842.

For the Farmers' Cabinet.

The Arabian Horse.

MR. EDITOR,—In a late work by Lieut. Col. Hamilton, "on the Natural History of horses," I find some remarks on the Arabian horse, which, I think it probable, you would wish to transfer to the pages of the Cabinet, now that they contain specimens of the most perfect individuals of the distinct breeds of these wonderful animals, and, I must add, done in the most masterly manner, having more the appearance of steel-plate engravings than of wood-cuts. The readers of the Cabinet are much indebted to all concerned in the publication of that useful work—will they accept the individual thanks of their subscriber,

T. W.

Lancaster Co., Pa.

"Although the Arabian steed might not be acknowledged by amateurs as perfect in form for exceeding fast going, no race is possessed of a more beautiful head, for above the eyes it is square, and below, the nose is smaller and more tapering than any other, the muzzle being fine, short, and adorned with wide and delicate nostrils. The eyes are very prominent, large and brilliant; the ears small, pointed, and movable, and the jaws and cheeks adorned with minute and swelling veins. The head is well set on the neck, which arches gracefully, and is bedecked by a fine, but sometimes rather deficient mane. The withers are high, the shoulders inclining and beautifully adjusted, the chest and body spreading out behind the arms, to give room for action to the lungs and heart, which are, in proportion, larger than in any other kind of horse. The limbs are remarkably fine, sinewy, and firmly jointed, the legs flat and clean, with pasterns rather long and flexible, so that, with an oblique position, they appear, when compared to the heavier European, not quite so strong as is desirable; but considering that in stature these horses do not often exceed fourteen hands and three quarters, it is evident from the length of time they will carry a rider at great speed and under great restriction of food, and the number of years they endure, that, for their climate at least, they are fully competent to accomplish all that is desirable, and even execute tasks that are not always believed of them. The quarters of an Arab are deep; the muscles of the fore-arm and thigh prominent; the tail set on high, with a middling proportion of sweeping hair; the skin, on all parts of the body, thin, presenting veins above the surface, and the hoofs, rather high, are hard and tough. From the broad forehead and space between the ears, judges assert their greater courage and intelligence, which, aided by education and kind treatment, they certainly possess beyond all other horses; while in temper and docility none can be compared with them. And for sobriety these horses are equally remarkable; an Arab of the desert allowing his mare only two meals in the twenty-four hours. She is kept fastened near the entrance of the tent, ready saddled for mounting in a moment, or turned out to ramble about it, confident in her training, that she will, on the first call, gallop up to be bridled. She receives only a scanty supply of water at night, and five or six pounds of barley or beans with a little chopped straw, and then she lies down contented in the midst of her master's family—often with children sleeping on her neck or between her feet, no danger to any being apprehended or experienced. In the morning, if not wanted, another feed, and on some occasions a few dates and a little camel's milk are given, particularly when water is scarce, and there is no green herbage; or during an expedition, which admits of little or no respite; camel's milk being almost the only nutriment of the foals. Under this mode of training, these mares will travel fifty miles without stopping, and they have been known to go 120 miles on emergencies, with hardly a respite, and no food. A bet against time was won by an Arabian horse at Bangalore, in the Presidency of Madras, running 400 miles in the space of four consecutive days. This occurred on the 27th July, 1841."

Frozen Potatoes.

POTATOES that are frozen, if taken in that state and immersed immediately in *boiling* water, will be found as good and palatable as if untouched by frost. It is not the operation of freezing that deteriorates the potatoe, but the gradual thawing to which they are subsequently exposed.

For the Farmers' Cabinet.

Motto.

And can it be that "the productions of the earth will always be in proportion to the culture bestowed upon it?" This doctrine I purpose to bring to the test of experience, for it is my intention to take sixteen acres of land only, near the city, which I shall divide in the following manner and cultivate in the way here stated, my object being to keep a breeding stock of hogs of superlative quality, and poultry of the very finest kinds. And, first, I shall make four divisions of the land, four acres in each, all surrounded by a single boundary fence; and on the first of these I shall plant oats early in the spring after an autumnal ploughing. The second portion will be devoted to roots—potatoes, beets, turnips of various sorts, ruta-bagas, cabbages, &c. The third, corn; and the fourth, clover. So my *rotation* of crops—of which we begin to hear so much — will be, 1, oats — 2, roots — 3, corn—and 4, clover. On the oat-stubble I contemplate sowing buckwheat so soon as the crop is removed; as also on that land devoted to the growth of turnips and beets, *before* they are sown, as there will be sufficient time for that crop to ripen and be removed, before the sowing of these commences. In this rotation, it is to be observed, there will be very little ploughing and working land, except for the crops of corn and roots; the clover-lay will be ploughed in the autumn for oats the next spring, to be sown and harrowed in without a second ploughing; while for the clover no ploughing will be requisite, as the seed will be sown and harrowed in on the corn at the last time of cleaning, with one ploughing only for the buckwheat. So that the ploughing for the year would be 18 acres only, viz. four acres oats, four acres buckwheat on the removal of that crop, two acres (a portion of the land designed for turnips) for buckwheat, four acres roots, and four acres corn. But by this course of management, a crop of oats, two crops of buckwheat, a crop of roots and cabbages, a crop of corn, and two mowings of clover for hay or soiling, might be harvested every year from sixteen acres of land. The only two exhausting crops being oats and corn, the land might by this rotation be kept in perfect heart until the end of time, the manure being given to the corn, root and clover crops, and never to the oats or buckwheat.

And now for the expenditure of the crops on sixteen acres of land.

1st. The oats to be cut into chaff without threshing, for the autumn and winter food of two horses and a cow; but if too much for this purpose, a portion might be threshed and the oats ground and mixed with corn and cob meal, and cooked for hogs.

2d. The roots and cabbages will be cooked for the hogs.

3d. The corn will be ground with the cob for hog-feed, boiled with the roots; the stalks cut and boiled for horses and cow.

4th. The clover cut green for soiling horses, cow and hogs, or dried for hay.

5th. The buckwheat for sale. I should then have to purchase straw for the bedding of my stock, which I shall have no objection to do, charging it as so much money spent in the purchase of manure for the dressing of the land.

And now, as I mean to do justice to my land, ought it not to give me in return, say 200 bushels oats, 2000 bushels roots and cabbages, 600 bushels corn and cobs, 200 bushels buckwheat, and soiling for cattle, to the amount of 12 tons of hay the two crops? I have said that my intention is to keep a "crack" stock of breeding hogs and poultry, and to cook their food; but as there are two ways of doing things — a right way and a wrong — would some of your readers, who have had experience in these matters, inform me how I might accomplish my object to profit?

I was never more interested than with a passage extracted from the Quarterly Journal of Agriculture, inserted at p. 391 of the Cabinet for July 1841, "on the management of small farms;" but there is one observation worth all the rest; it is said, "The new system, keeping himself and family always busy and paying them well for their labour, enables him to sell fifteen dollars' worth of potatoes a year in place of spending more than double that sum in that article for the support of his family, as he had been wont to do;" and this springs from the new system of rotation, the green-food and soiling system.

It is my intention to keep a pair of horses, as I contemplate carrying much manure on to the land, and I mean that they shall be strong and active. I have ever considered it the height of folly for a man to keep a weak team; a small addition to the cost at first purchase would be the only consideration, the after expense being the same, with the means of doing double labour and keeping up with the seasons. But as my family is small, and as they have been accustomed of late years to sojourn in the city, I shall keep but one cow for the supply of milk and butter for the family, calculating that the less of dairy-work there is to do, the better it will be attended to; but I am quite convinced that one good cow, with such keep as I shall be able to afford her, will give three times the produce of those half-starved creatures which are so often found a disgrace to their owners.

Now, would our friends put these things together, and say if it be not quite possible

for a sober, industrious family of simple habits, consisting of a man, his wife, and two children, to raise the means of a comfortable maintenance on a farm of sixteen acres of good land near a market? J. MARSHALL.

Philadelphia, Jan. 21, 1842.

P. S. Should any one consider the above account of crops too highly estimated, I would refer them to Mr. Gowen's statement, at p. 188, vol. 5 of the Cabinet, where it will appear that they are by no means so. His yield of roots on $3\frac{11}{16}$ acres being 2703 bushels, valued at $778 60, the price at which he could readily have disposed of the whole.

Fattening Animals.

THERE are some rules which may be advantageously adopted in feeding animals, which, however obvious they may be, are too often passed over or neglected. Some of these will be specified.

1st. *The preparation of food.* This should be so prepared that its nutritive properties may be all made available to the use of the animal, and not only so, but appropriated with the least possible expenditure of muscular energy. The ox that is obliged to wander over an acre to get the food he should find on two or three square rods— the horse that is two or three hours eating the coarse food he would swallow in fifteen minutes if the grain was ground or the hay cut as it should be — the sheep that spends hours in making its way into a turnip, when, if it was sliced, it would eat it in as many minutes — the pig that eats raw potatoes, or whole corn, which, when cooked, could be eaten in one-quarter of the time now used, may indeed fatten, but much less rapidly than if their food was given them in a proper manner. All food should be given to a fattening animal in such a state that as little time and labour as possible, on the part of the animal, shall be required in eating.

2d. *The food should be in abundance.* From the time the fattening process commences, until the animal is slaughtered, he should never be without food. Health and appetite are best promoted by change of food rather than by limiting the quantity. The animal that is stuffed and starved by turns, may have streaked meat, but it will be made too slowly for the pleasure or profit of the good farmer.

3d. *The food should be given regularly.* This is one of the most essential points in feeding animals. If given irregularly, the animal indeed consumes his food, but he soon acquires a restless disposition, is disturbed at every appearance of his feeder, and is never in that quiet state so necessary to the taking on of fat. It is surprising how readily any animal acquires habits of regularity in feeding, and how soon the influence of this is felt in the improvement of condition. When, at the regular hour, the pig has had his pudding, or the sheep its turnips, they compose themselves to rest, with the consciousness that their digestion is not to be unseasonably disturbed, or their quiet broken by unwonted invitation to eat.

4th. *The animal should not be needlessly intruded upon between the hours of feeding.* All creatures fatten much faster in the dark than in the light, a fact only to be accounted for by their greater quiet. Some of those creatures that are the most irritable and impatient of restraint while feeding, such as turkeys and geese, are found to take on fat rapidly when confined in dark rooms, and only fed at stated hours by hand. There is no surer proof that a pig is doing well, than to see him eat his meal quickly and then retire to his bed, to sleep or cogitate until the hour of feeding returns. Animals while fattening should never be alarmed, never rapidly driven, never be fed at unseasonable hours, and, above all things, never be allowed to want for food.—*Cult.*

Royal Victoria Vine.

THE following is a description of this splendid new variety of the black Hamburg, raised at Burscot Park, the seat of Pryse Pryse, Esq. M. P.

This grape is considered by eminent judges to be decidedly the finest black grape yet introduced, combining every admirable characteristic requisite in grapes. The berries, which are of a fine oval shape, measuring from three to four inches in circumference, are of an excellent flavour; colour jet black, with a rich bloom; the weight of the bunches from two to three pounds. It is a prolific bearer, and well suited for early vineries or green-houses, and is admirable for continuing in good preservation on the vine a long time when ripe. Specimens were exhibited at Stafford Hall, Chiswick, the last year, for which a silver medal was awarded; they have also obtained prizes at the other horticultural exhibitions. This grape is now introduced into this country, and will fruit the next year in the grapery of the Hon. T. H. Perkins, of Brooklyn.—*Hort. Mag.*

THE philosopher's stone is no longer a fiction—it consists in a large pile of manure, and lies concealed somewhere close by my farm-pen, my stables and my hog-pen; and the right way to work it is, to distribute it carefully at the proper season over your fields—its magic touch will turn everything to gold!—*Rev. H. Turner.*

For the Farmers' Cabinet.

Fruit Trees.

The season for transplanting fruit trees being now near, it behooves those who are not amply supplied, both as to quantity and quality, to bestir themselves in this important matter, for a few weeks' delay at the proper season of planting is the loss of a whole year. Procure an assortment of the *best* apple, pear, plum, cherry, quince and peach trees, for it is attended with the same trouble and expense to cultivate inferior fruits, as it is to be furnished with the best kinds.

Be careful in planting to give the trees a fair chance for life and health by digging the holes in which they are to be set wide and large, so that they may be surrounded by loose earth, that can be easily penetrated by the tender fibres of the roots which are to convey nourishment for their sustenance and growth. A tree properly planted will grow as much in five years as one carelessly and badly set in will in ten; and often the chance of survivorship is dependent on slight circumstances.

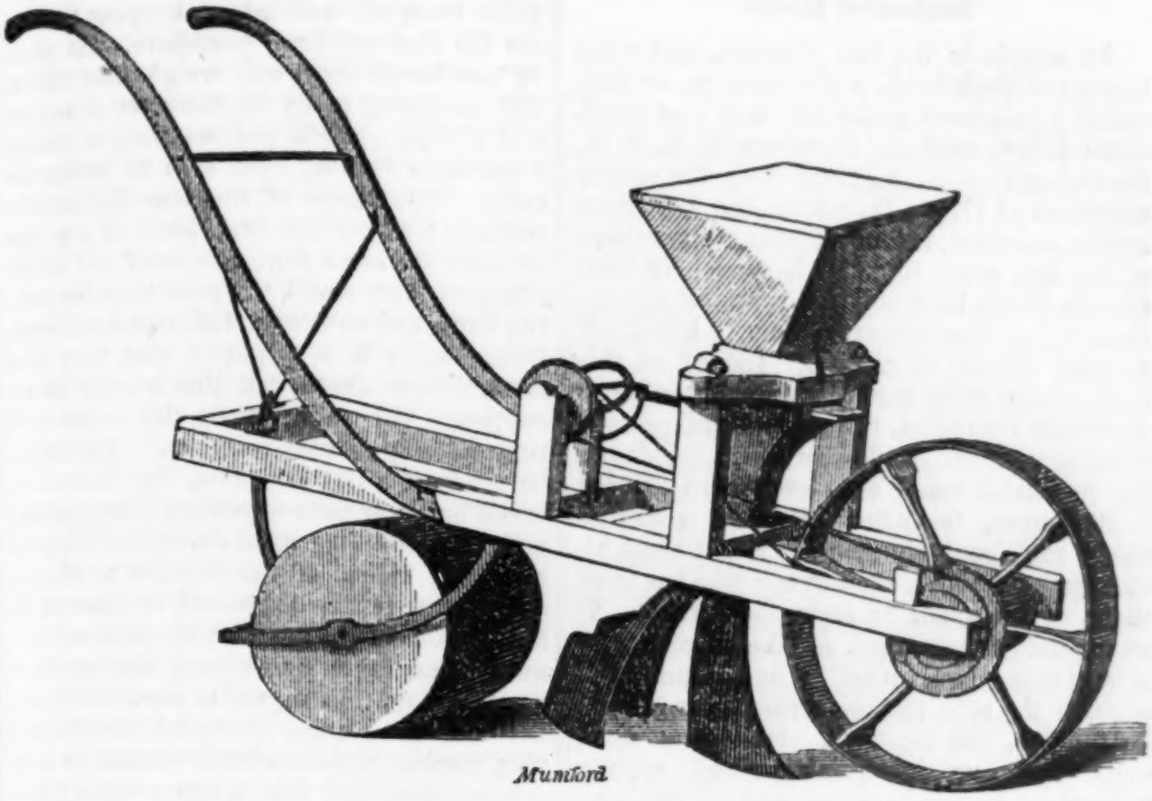
An excellent plan for preventing young fruit trees from becoming hide-bound and mossy, and for promoting their health and growth, is to take a bucket of soft soap and to apply it with a brush to the stem or trunk from top to bottom; this cleanses the bark, destroys worms or the eggs of insects; and the soap becoming dissolved by rains, descends to the roots and causes the tree to grow vigorously. A boy can make this wholesome application to several hundred trees in a few hours. If soft soap was applied to peach-trees in the early part of April to remove or destroy any eggs or worms that might have been deposited in the autumn, and again in the early part of June, when the insect is supposed to begin its summer depositions of eggs, it is believed we should hear less of the destruction of peach-trees by worms. But the application should *not be suspended* for a single season, on the supposition that the enemy had relaxed in his hostility. Try it this spring, and communicate the result with all the circumstances.

Poma.

Profits of Farming.

We believe there are many farmers who take an incorrect view of the business of farming as far as its profits are concerned. They seem to suppose that what is sold from the farm is alone to be accounted profit, while no note is taken of what goes to the support of the family, or is invested in improvements on the farm. To give an instance, we will refer to a conversation we had with a farmer a few days since, a man worth some six or eight thousand dollars, industrious and thriving; but who complained that he is only able to raise in cash only some 3 or $400 annually. As a contrast, he mentioned a friend of his who had about the same amount in funds that he had himself in real estate, and he seemed to consider the interest his friend received as a clear profit on his capital, and that money so invested gave more income than the farm would. We knew that our farmer had a large family to provide for, and suspecting he had overlooked the cost of providing for them in his estimate of what he received from his farm, inquired how much he thought he should have left in cash, after maintaining such a family as his, from the sum his friend received as interest? He hesitated a moment and answered, Not any thing; his receipts would barely foot my bill of family expenses for one year; in truth he has little or nothing left after supporting his own.

So, we doubt not, it often is with the farmer. That which he and his family eat, drink, and wear, that which goes to make them comfortable and respectable, because it is the product of the farm, the gift of a kind Providence, and the result of their own toil, is frequently overlooked by him in the estimate of the profits and loss of farming, and nothing is counted but the cash which remains after expenses and outgoes are provided for. This is not treating the farm fairly. In one case the farm is capital, in the other the capital is in the funds. That which goes to the support of the family is as much the product of capital in one case as the other, and in both cases should be considered as the profit; and if the farmer, after the maintenance of his family, and defraying the expenses of labour, improving his farm, &c., has some three or four hundred dollars left to purchase more land, and dispose of as he pleases, while his friend, the fund-holder, has little or nothing left, it surely cannot be reasonably inferred that the farmer's profits are least. Ay, but the farmer has to work for his profits, while the other lives at his ease. True; and here we suspect lies the great difficulty, and it is an evil that should be corrected at once. The objection implies that it is disgraceful, unhealthy, or unprofitable to labour, suppositions entirely erroneous. It cannot be disgraceful to labour in a country where every man is the architect of his own fortune, and makes or mars his condition for life; it is not unhealthy, as the experience of the whole world proves; and as to profit, where can be found a class of men more prosperous, accumulating wealth faster than American farmers? Before the farmer concludes there is no profit in farming, let him look at the whole ground, and we think a different conclusion will be reached!—*Alb. Cult.*



JONES' PATENT IMPROVED SEED-PLANTER OR DRILLING MACHINE.

Mr. Jones has deposited a drill at the office of the Cabinet, and reports that he is now prepared to manufacture and sell, upon reasonable terms, his newly invented and improved machine for planting corn, peas, beans, broom-corn, sugar-beet, ruta-baga, onion, or any other kind of seed which can be planted with a drill. With this machine one man will be enabled to perform the labour of five or six, dropping any desired number of seeds at a time at any depth or distance required, with great accuracy. It is very compact and durable in its construction, and if carefully used will last a lifetime.—Ed.

Directions for using.—Before the seeds are put into the hopper, they should be carefully cleaned, or there will be danger of the dirt or pieces of pods filling the cells in the slide, thereby preventing the seed from dropping regularly. Sugar-beet seed should be well rubbed in a wire sieve, which will separate much dirt, and make them more smooth and regular. Then, for planting any particular kind of seed, insert the wooden slide labelled accordingly into the guides, and raise or lower the rest-plate by means of the thumb-screws, until it touches the bottom of the slide, but leave it sufficiently loose to allow it to vibrate freely. Next, determine the *distance* which you wish to drop the seed, by changing the band on to the different pulleys, and the *depth*, by raising or lowering the roller, by means of the screw at the rear of the machine. The roller also serves as a fulcrum for raising the propelling wheel from the ground when the motion of the slide is wished to be stopped; or as a pivot on which to turn the machine at the end of the rows. The coverer behind the plough can be raised or lowered at pleasure, so as to throw more or less earth on the seed. The *keys* at the fore-part of the machine, are designed for moving the propelling-wheel ahead, and thus to tighten the band if it should be too slack on changing from one pulley to another. Care should be taken to keep all the parts which are subject to friction, well oiled.

State and county rights will be sold on reasonable terms, or orders for machines will meet with prompt attention, if addressed to the subscriber, at Camden, New Jersey.

Joseph Jones, *Patentee.*

Camden, N. J., Jan. 18, 1842.

For the Farmers' Cabinet.

Berkshire Hogs.

An article in the last Cabinet, under the caption of Berkshires, and containing so very unfair a judgment on the merits of that invaluable breed, over the signature of R. S. B., Northampton Co., together with the severe strictures of G. H. D., where the Berkshire mania, so called, is classed with the humbugs of the day, seem to make it proper for their friends, if they have any left, to protest against their being thus unceremoniously killed off without benefit of clergy. Indeed at this time, when, with the versatility peculiar to American character, the agricultural press is teeming with anti-Berkshire essays, condemning in louder tones than ever were uttered in its favour, the whole breed, as a merino sheep, multicaulis humbug, it might seem almost presumptuous, even in one who has tried them, to endeavour to stem the torrent. It seems unfortunate that, on the introduction of any thing new either in agriculture, science, or the arts, in the thermometer of public opinion, the mercury, starting at zero, must rush up immediately and rapidly throughout its whole range, and all the way back to the starting point, and even below it before it finally attains its proper state of quiescence. Particularly on the introduction of a new breed of animals, we seize on them with great avidity from the mere novelty, invest them with extravagant and supernatural qualities, proclaim the wonderful things they *are to do*, and when at last they fall short of these calculations, the whole affair is pronounced a "merino multicaulis humbug." From being placed in the first instance far above their merits, they are next placed far below them. This, in the United States, is always the modus operandi of introducing new breeds of stock to farmers, who, after passing through the high-fever stage of heavy profits, and down again to the cold or collapse, at last finally settle in a medium temperature, and give to the new breed whatever is its just value. To this process Berkshires must submit. R. S. B., in the communication referred to, does not make the true issue. He says one of his neighbours put up two Berkshires and two common hogs in a *stable* to feed, and that the common ones outweighed the others. This is very probable, but does not prove the main point, *that the Berkshires did not return the greatest weight for the quantity of food consumed.* Berkshire breeders do not contend that *generally* they attain such great weights as other hogs, but that a given amount of food will make a greater quantity of pork; that if it does not feed such large hogs, it will feed a greater number. I have so fully satisfied myself of this point, that, although owning some very fine ones of the Chester Co. breed, I have killed them off, and intend keeping nothing but the thorough-bred Berkshire. At about 12 months old they will weigh from 200 to 260 lbs., being ready for slaughter at any period of their growth, and requiring at last but a few days' feeding upon corn to harden the meat. The shape of the true Berkshire is perfect, forming the beau ideal of a perfect animal; the bone fine, the head and all the offal parts very small, the most valuable parts, the hams and shoulders, full, round and large. Occasionally it is admitted that they have not sufficient depth, but this is only an exception. Where it occurs, the owner must remedy it by careful selection. This cannot be made a valid objection, for there is no breed however pure or perfect of any animals but that something must depend on the judgment and talent of the breeder to keep so, and to remedy any occasional or inherent defect. Something approaching the barrel form must of necessity accompany the quality of easy feeding. In regard to size, the farmers here who feed a few every fall for Philadelphia market, besides what is wanted for home consumption, find that a hog weighing from 150 to 250 lbs. is the most saleable and brings the best price. The Berkshires make just the weight wanted for family use. Whether in Northampton county, where grain is lower than here, they cannot *afford* to waste it on large consumers, who will carry to market greater weight and size, is for him to say. Another characteristic of the Berkshire is the superior quality of the meat. In this at least there is no mistake. Berkshire hams are well known in Philadelphia for their superior flavour and richness. They are remarkably free from fat, and are no less known by their handsome rotund shape, than by their tender and juicy qualities. A slice of Berkshire ham, properly cured, is a dainty morsel appreciated by a connoisseur. Another recommendation is the great fecundity of the breed, producing from 8 to 15 at a litter, and the fact of their being most excellent nurses. By a most unaccountable mistake, R. S. B. objects to them on this very head, and says they are not prolific, that four of his neighbour's sows had but one each, and that generally they have but four or five. I have raised Berkshires for several years, have sold numbers of them not only in this neighbourhood, but to gentlemen at a distance, and as far as my experience and observation go, would say they are not more noted for their *black* colour than for their success in safely rearing a full average number.

The true question then at issue, at least in this section of country, is, *what breed of hogs will return the greatest weight for the*

quantity of food consumed. Here lies the profit more than in the individual weight. A small, well-made animal may bring more money to the farmer, than one of twice his size, from the difference in the fattening property. It is generally admitted that very large animals are not profitable. They may do to grace the columns of a paper, and gratify those who have a penchant that way, without regard to the expensive process, but they will not suit the common farmer. I once was seized with this desire to feed a large hog; purchased of a breed well known for attaining immense weights, but was completely cured. It weighed between five and six hundred, and consumed as much food as I am since satisfied would have fattened double the weight of Berkshires. It is a satisfaction to the early friends of the Berkshires, to observe that public opinion in respect to them has passed through the collapse state; that wherever the pure breed exists, prejudices even against colour are rapidly dying away; and that they are slowly but surely creeping into favour, and earning the emphatic appellation of the farmer's hog. One thing undoubtedly which has retarded and still retards their reputation is the vast number which, since they were first introduced, have been palmed off as genuine Berkshires, having very little if any of that blood. The cause of this is to be found in the high prices at which they were sold, $30 and $40 per pair, and the absurd rule for testing purity, that they must be precisely of a certain shade of colour, having so many white feet, and so many white hairs in the tail; thus inviting imposture, and inducing persons, wherever they could obtain these marks, which often appertain to a half or three-quarter blood, as well as to the full blood, to pass them for genuine Berkshires. A cross for the purposes of speculation has, no doubt, often been founded on very inferior stock. The true Berkshires have thus been made to bear not only their own burdens, but have been charged with the sins of a whole herd of worthless mongrels. However breeds may be denoted by certain external marks either of colour or shape, no rule for all cases can be invariably established: there will occasionally be exceptions. Durham cows generally run into light colours, and it is more absurd to say that Berkshire pigs are or are not pure on account of their feet or tail, than to condemn a Durham cow which happened to be of a red colour, or had a dark nose.

P. M.

East Bradford, Chester Co., Pa.

The man who is attached to the soil will endeavour to make it better, instead of wearing it out, with the view of leaving it "year after next."

Wintering Sheep.

It is commonly considered more difficult to winter sheep, than most other domestic animals, and this is doubtless true to a certain extent. But in nine cases out of ten, the want of success is owing to bad management, which is generally misnamed *ill luck*. Sheep, in order to bear the winter well, should first of all be prepared for it, by being kept in good condition at the commencement. About the first of December, instead of being left to roam over the fields, to obtain food from the scanty herbage, they should be entirely fed on the preserved growth of summer. Little nutriment can be found in grass at this season—besides, what now remains should be left to prepare it for an early and vigorous growth in the spring.

There is one subject which has as yet received little attention from our farmers—it is that of providing suitable sheds for the protection of sheep from the winter's cold. Now we are aware that many farmers consider this as wholly unnecessary, and believe that sheep, with their thick coats of wool, would be no more benefited by shelter than the down-clad animals of the arctic regions. But this is a great error. Who has not observed them, on approach of severe weather, carefully seeking what feeble protection they could obtain from the storm by the side of stacks, or under open fences? Would they do this if it did not contribute to their comfort? Certainly not. Whatever, therefore, contributes to their comfort, demands attention, and whatever causes suffering to them, should be carefully avoided.

But by constant exposure in open fields to storms and snow, they are almost constantly suffering in a greater or less degree, throughout the long months of winter. In those countries of Europe which grow large quantities of the finest wool, strict attention is given to this subject, and sheep are not only sheltered every night, but whenever the weather demands it during the day; and this is said to be essentially necessary in preserving the quality and fineness of the wool.

It is a mistaken notion that water is not necessary for sheep; the fact that they always drink when it is supplied to them, proves that it is needed for the performance of the animal functions to which it is as requisite as in other animals. Experience has also proved the correctness of this.—*West. Far.*

Every substance which *swims* on water displaces so much of the water as is exactly equal to its own *weight*; but when a substance *sinks* in water, it displaces water equal to its *bulk*.

For the Farmers' Cabinet.

Murrain in Cattle.

We have sad accounts from England respecting the fatal disease which is carrying off their cattle by hundreds, and think that Mr. A. B. Allen did wisely in abstaining for the present from bringing over any horned cattle. It is said the veterinary surgeons term the disease the bloody murrain, and consider it infectious: now I know not how this can be, for amongst the very many cases that I have witnessed, I have never been able to convince myself of that fact. It is true that to a casual observer it may have the appearance of being so, for the cattle in a large pasture, or even in a whole parish or hundred, will oftentimes be attacked by it, and the disorder will spread abroad like a contagious fever, but I have no doubt the evil arises from a disordered state of the digestive organs, brought on by an unwholesome state of the atmosphere, or by feeding on unhealthy pastures, those low, cold and damp meadows, infested by aquatic plants, which, being taken into the stomach, become putrid and indigestible; and thus that noisome and putrid disease is engendered. For I have known one half the cattle upon a certain farm to be carried off by it, while not a single case has occurred on the immediately adjoining estate, but on the next farm again to that, the whole herd has been swept away; and just so have I observed the produce of their pasture lands to vary from dry, sweet and healthy herbage, to that which is long, moist, sour and unwholesome. And I am inclined to believe that the murrain in cattle, like the botts in horses, may be considered an *effect*, rather than a *cause*, both disorders arising, perhaps, from an unhealthy state of digestion, by which is engendered a disease, which, although it must be termed epidemic, might not be by any means infectious; indeed I well remember a dairy of fine cows which was thinned to less than one-half its original number, where the individuals were attacked by the disease on being confined to their winter quarters, the occupants of stalls 1, 3, 4, 6, 8, 10, &c., being carried off, while the intermediate numbers escaped uninjured, and remained in perfect health.

But to many persons it will no doubt seem strange to consider the origin of two disorders, so very different in their appearance, symptoms and effects, as the botts and murrain, as arising from the same cause, namely, indigestion, but as I conceive that they are engendered by a disordered state of the stomach caused by sour and unwholesome food, and that they might both be cured, or which is better, be *prevented* by timely administration of a medicine, alkaline in its nature, I believe that reason will bear me out in the conclusion to which I am partly led by perusing an article on this subject in the Cabinet, vol. 4, p. 177, where it is said—quoting from the American Farmer—"Some years since I purchased a horse, but he had the appearance of labouring under disease; I commenced a course of treatment which I had before pursued in cases similar to appearance, but without effect; I was therefore induced to try the use of *lime*, as I was confident he was filled with botts, for he had discharged several; I therefore commenced by giving him a tablespoonful of slaked lime three times a week in bran mashes. After pursuing this course near two weeks, the botts began to pass away in quantities, varying from ten to twenty, which he would expel from his intestines during the night; in the mean time his appetite began to improve, and in six weeks he was one of the finest geldings I ever saw; from that day to this I have kept up the use of lime amongst my horses with decided benefit; and as an evidence of its good effects, I have not lost a horse since I began to use it. And lime is a certain preventive in keeping cattle from taking the murrain. As an evidence of this fact, I have used it among my cattle three times a week, mixed with salt, for three or four years, and in that time I have not lost a single animal by this disease; but in the mean time some of my neighbours have lost nearly all the cattle they owned. But I will give a stronger case than even the one above mentioned. One of my neighbours who lost all his cattle, had a friend living within two hundred yards of him, who had several cattle which ran daily with those that died, and his cattle all escaped—he informed me that he made it an invariable rule to give his cattle salt and lime *every morning*. I have, therefore, no doubt but salt and lime are a sure and infallible remedy for botts in horses and murrain in cattle."

And I am reminded of a circumstance by a friend, who has often before mentioned it; he had two fields of pasture near his house—on one of these he spread lime upon the turf to the amount of more than 200 bushels per acre, but as the other field lay immediately below his cattle-yard, from whence he had formed drains to carry the water over its surface in the most complete manner, he determined to let that suffice for a dressing: and the effect of the highly impregnated water from the yard was a growth of grass truly astonishing. Both fields were kept in pasture, and when the stock had eaten one of them down, they were removed to the other, and so changed regularly about; but the effect of the different crops on the appearance of the stock, horses and cattle, is not to be ex

pressed, for while feeding on the limed land their coats were close, shining and healthy, and their spirits light and cheerful, even when they were compelled to labour hard to obtain a belly-full; but when turned into the watered grass, six inches or more in height, a difference for the worse could be perceived in 24 hours, and every day after they lost condition amidst the greatest abundance, with coats rough and staring, lax in the bowels and flaccid, with distended paunches, dejected countenances, and sluggish in their movements: they soon exhibited a depreciation in value to the amount of about half their former worth. But the transition to health and vigour and good looks was quite as sudden and apparent on a return to the limed land, for again in 24 hours, or by the time the food had passed through the system, a change, particularly in their air and carriage, was very perceptible. My friend adds, he never had an instance of the murrain or botts while his stock fed on these pastures, but is satisfied he should have had both, but for the change to the limed land; for while feeding on the watered pasture, the stock had always the appearance of a predisposition to that state of derangement of the digestive system, by which he has no doubt these diseases are engendered.

In conclusion, I would ask, is it not quite fair to draw the following deduction from what has been said, namely, that all dairy pastures ought to be heavily limed, it being the most natural thing in the world to suppose that a proper secretion of milk, the best and most wholesome, depends very much on the nature of the food with which the animals are fed? and must not the butter from a cow that is in health and spirits be of better flavour, colour and consistence, than that from one that is lax, washy and weak, from feeding on watery, acid and soft herbage? and will not this account for much of the disgustingly rancid, ill-flavoured and ill-looking butter which we so often find in the market? My friend above quoted, and who is now at my elbow, answers "Yes; for while my cows fed on the watered meadow, the butter was scarcely eatable—white, soft and ill-flavoured, but it was sweet, firm and fine-flavoured when they were confined to the limed land." Ergo, lime your pastures, and allow your stock as much salt as they will consume daily, for I am convinced that lime and salt are a remedy for "botts in horses," as well as the "murrain in cattle." VIR.

No high improvement in the agriculture of any country can take place, whilst the spirit of emigration is abroad, and the population a floating one: the farmer should have a fixed and abiding attachment to the soil.

For the Farmers' Cabinet.

The Span or Rafter Level again.

THE span, or rafter level, as its name denotes, resembles in appearance a pair of rafters with a collar-beam framed across them. It may be made much in the same way, with some extra bracing, of white-pine or any other light and stiff wood, not much subject to spring or warp by exposure to the weather. The span of the feet may be of any desirable length, but from 12 to 16 feet is generally considered the most convenient, particularly if it is to be much used in making drains. The joints should all be well fastened together with wood-screws, and a small screw may be inserted on each side near the apex or peak of the instrument. As any carpenter, who can frame a pair of rafters, can readily make one, it is thought unnecessary to give very minute directions concerning this part of it. To fit it for use, place the instrument on any smooth surface, a piece of sawed timber for instance, laid as near level as can be judged by the eye, and mark the place occupied by each foot, then hang a plummet from the screw near the apex, and holding the instrument in such a position that the plummet line may just swing clear of the face of the cross-piece. When the plummet has come to rest, mark the place where the line crosses the cross-piece with a lead-pencil, then reverse the feet of the instrument, placing them exactly in the marks on the timber, and mark the point where the plummet-line now crosses the cross-piece. Then with a pair of sharp-pointed compasses divide the space between the lines into two equal parts, on this division make a mark with a fine saw or other suitable instrument, and efface the pencil marks; then raise one foot of the instrument until the plummet-line falls exactly on the line last made on the cross-piece. Both feet of the instrument will now be in the same level or horizontal line, and by hanging the plummet-line on the other screw, a mark may be made on the other side or face of the cross-piece, and the instrument can be used with the plummet on either side as most convenient. It may be here remarked that if, on reversing the instrument as above directed, the line coincides with the mark first made, it shows that the surface it stands on is level and that the work is done except marking it permanently.

The instrument is now a span or rafter level, and in using it, whenever it is so placed that the plummet-line coincides with the mark on the cross-piece, the feet will be in the same level line, and whatever it requires one foot to be raised to make it so coincide, so much is the surface or points on which they rested out of level. The instru-

ment will be found very useful in digging cellars, laying out the foundations of buildings, and a variety of other purposes that will readily suggest themselves to every farmer. It differs in form, but not in principle, from the common level board of the carpenter. Its only advantage is in combining greater strength and stiffness with less weight of materials. To fit it for the purpose of giving a slope to a drain, or for any similar purpose, place it so that the plummet-line shall coincide with the mark on the cross-piece, then place a block, say an inch thick, under one of the feet, and mark the place the line crosses the cross-piece; then add another inch under the same foot, and mark again, repeating the operation as often as may be thought necessary. Now take out the blocks and go over the process again, by placing them one at a time under the contrary foot, and making the necessary marks on the cross-piece. The lines should then be numbered, 1, 2, 3, &c., from the middle one. It must be evident from the construction of the instrument, that when it is so placed that the plummet-line falls on mark No. 1, or that nearest the middle one, that the end of the instrument which is then nearest the plummet-line will be one inch lower than the other—when on No. 2, two inches, &c. And also, in using it, as drains are usually cut in the ascending direction, the plummet-line must be made to fall behind the middle mark, to give them the required rise or slope. The instrument, if marked on both sides of the middle line, can be used either end foremost. If the span of the feet be made 16 feet 6 inches, or one perch, and the lines marked as above, the plummet-line resting on No. 1 will give a fall, or rise, of one inch to the perch, or 26 feet 8 inches to the mile—when resting on No. 2, two inches to the perch, &c. And if the span be made 12 feet 4½ inches, or three-quarters of a perch, and the blocks used for raising the feet in marking be made three-quarters of an inch thick, each of the lines will show the same fall as above. Fractional parts of an inch may be found by dividing and subdividing the spaces between the lines, or by using blocks of the proper thickness.

The instrument as above divided will serve to show the fall in certain proportions to a given length, but there are many cases in draining where these relative proportions do not exist on the ground. Thus, the above lines and their subdivisions would show a rise or fall of 6 feet 8 inches, 13 feet 4 inches, or 26 feet 8 inches to the mile, and sundry others, by various additions of them together. Now, if the fall of the ground were found to be any number of feet and inches between these, it could not be properly proportioned in the drains by the use of the above lines. A ready method to obviate this difficulty, and fit the instrument to meet every case, would be to make the span of it 12 feet 6 inches, or the one-eighth part of 100 feet; then ascertain the number of inches of fall there is in 100 feet (in the directions of the drain) of the ground to be drained, and for every inch thus found, let one-eighth of an inch be allowed to the block used in raising the feet of the instrument when making the slope marks; or let the block be as many eighths of an inch thick as there are inches of fall in 100 feet. Thus, if the fall in 100 feet be 6 inches, the block must be six-eighths or three-quarters of an inch thick; 7 inches, seven-eighths; 8 inches, 1 inch, &c. In such cases, the lines on the instrument (except the middle ones) should be made with a lead-pencil, or red chalk, so as to be readily effaced when they are done with, and it becomes necessary to make others. By making the instrument of this length, which we believe will be found more convenient in using than any other, it can by the above method be at any time, in a few minutes, adapted to any case that can occur.—The principle upon which the whole rests being simply to find the fall of a portion of the ground to be drained, or drain to be made, equal in length to the span of the instrument, and to apply a block in making the marks equal in thickness to that fall. But to ascertain this fall, free from the errors occasioned by small undulations in the ground, considerable lengths must be taken, say not less than 100 feet, which must afterwards be divided into such lengths as will make a portable instrument. For finding the difference in level between distant points, the span level is not the most appropriate instrument. Some remarks I have to make on this branch of the subject I must defer to another occasion.

In giving the foregoing description of the Span Level, and the method of adapting it to be used as a slope instrument, it is not supposed that the subject is exhausted, or that other forms and methods might not be pointed out; the object being to explain and illustrate in as plain and familiar a manner as possible, the principles on which the instrument is constructed, and the method of applying those principles to practice. For this purpose, methods and measures plain and easily comprehended by all have been used at the risk of being thought tedious and common-place. The subject is a very plain and simple one in itself, yet there are a vast number who are not familiar with it; and that there are many others who but imperfectly understand it, we need not go further than the pages of the Cabinet to determine. It is for the benefit of these, and not for the wise or learned, that I am now writing.

January 22, 1842. S. Lewis.

For the Farmers' Cabinet.

The Cut-Worm.

My corn has been almost totally destroyed several times by the depredations of the cut-worm; in fact, their ravages have become truly alarming. I have resorted to various expedients to avoid this great evil, but have observed that the lands ploughed in the fall, the winter, and the spring, both in the same field and in different fields, to suffer equally by the mischief occasioned by the cut-worm. I flatter myself, however, with the belief that I have at length discovered a remedy for this scourge, which consists in mowing the crop —not feeding it. I commonly mow for hay in the sixth month, and again in the fall for seed; then, early the next spring, I plough up the same field for corn, and have never known a piece of land thus prepared to be attacked by the cut-worm. One close mowing in the eighth month may probably answer the same purpose; but of this I am not so positive. In the few cases which have come under my notice, however, the plan seemed to answer. Now, I am not prepared to offer any reason for the success of this plan: it may be that the egg of the fly being deposited on the high grass, is carried with the hay into the barn; or it may be destroyed by the scorching rays of the sun on the removal of the crop; or the fly may seek other fields better adapted to their purpose than that which is fresh mown. I expect to make farther observation respecting this very interesting matter, but wish the reader of the Cabinet to know all that I know about it at present, and to profit by the information if they will.

I would be very glad if authors would affix their names to every article published in the pages of the Cabinet. Come, friends, don't be ashamed of your productions; it is very desirable that we should know where the writer of an article resides, and also his name; this is, in many cases, indispensable, in order to be able to appreciate the value of his communication. Micajah T. Johnson.

Short Creek, Harrison Co., Ohio, 23d of 1st mo. 1842.

Green Corn.

Mr. Editor,—The lovers of green corn (roasting ears) in my neighbourhood, are sadly annoyed by an evil for which I would ask of your intelligent readers a remedy. When the green corn is pulled and the husk stripped off, behold! an ugly *green or grey worm*, from half an inch to two inches long, which has been devouring the corn all around the top of the ear, sometimes up and down the whole length, greatly injuring its value, and presenting a very offensive and unpleasant spectacle. I have seen our market full of early corn in July, and almost every ear disfigured in this way; upon examining the ear, there will generally be found a little hole perforating the husk, through which the worm made his ingress, or where the husk was punctured by a bee or insect, for laying an egg, and thus producing the worm. Will some of your readers inform us, in your next, how this *loafer* may be expelled, or his ravages prevented? Latitude 39.

Pennsylvania Statistics.

By the returns made to the national government we learn that there are 30 powder-mills in this state, manufacturing about 1,200,000 pounds annually. Drugs and medicines, to an amount exceeding two millions of dollars, are manufactured. There are 25 glass-works, 182 potteries, 20 sugar refineries, 87 paper manufactories, employing about 800 men; 39 rope-walks, 736 flooring-mills, 2554 grist-mills, 4359 saw-mills, 118 oil-mills, 346 fulling-mills, 235 woollen factories, 109 cotton factories, 950 people employed in raising tobacco, 1170 tanneries, 1010 distilleries, 87 breweries, 16,328 gallons of wine made, 213 furnaces, 365,127 horses, 1,767,620 sheep, 1,503,964 swine, 11,522 men engaged in mining operations, 13,213,077 bushels of wheat, 100,000 bushels more than raised in New York.—*Philadelphia Gazette.*

To a Land Tortoise.

Guid mornin' frien', ye're early creepin',
Wi' head erect about ye peepin',
And steady gait ye always keep in,
Aye sure and slaw,
I doubt the time ye tak' to sleep in
Is unco sma'.

Your crawlin' pits me aye in mind
O' turtles o' the human kind;
How many crawlers do we find
'Mang sons o' men,
Wi' thoughts unto the earth inclined
Until the end!

Ye'd live a hunder years they say,
An' mony a weary mile ye gae,
An' mony a hunder eggs ye lay,
Ye queer auld beast,
Whilk gies the snake, your mortal foe,
Fu' mony a feast.

Ah! now ye've shut yoursel up tight—
Ise think ye're in an awsome plight,
At seeing such an unco sight
As my queer face;
Gang on your gait—I'm na the wight
Wad harm your race!

Aiblins, I might, for fun or fame,
Just carve upo' your hard auld wame,
The twa initials o' my name,
An' whan I met ye,
Whilk done, nae ither right I'd claim,
Than down to set ye.

But fare ye weel! I now maun leave ye,
I ken my absence will na grieve ye;
Wi' jingling Scotch I'll na mair deave ye,
An' ithers too.
So, ance for a' I freely gi'e ye
A lang Adieu!

Preserving Grapes.

At the meeting of the Philadelphia Agricultural Society, on the 2d inst., Mr. James Gowen made his annual present of a basket of grapes, of the Isabella, Catawba, and Blond species; they were in the highest perfection, and full of fine juice. The mode of preserving them is extremely simple, notwithstanding the mystery on this subject to which some pretend. It is thus:—a floor is made between two joists in the cellar, and the space filled with grapes and fine wood shavings; the ends are closed with moveable boards.

Agricultural Society of Newcastle Co., Delaware.

At a meeting held at the City-Hall, on the 22d of January, the following resolutions were submitted by the President, Dr. J. W. Thompson, which were read, and unanimously adopted:

Resolved, As members of the Agricultural Society of New Castle county, and citizens of an extensive manufacturing community, that we view with interest and high satisfaction, the strenuous efforts now making by many American citizens in different parts of the United States, to give a preference, hereafter, in their purchases, to the products of their own soil, the wares of their own mechanics, and the fabrics of their own manufactures over those of foreign importation.

Resolved, That as farmers producing bread stuffs for consumption, and numerous raw materials for the manufacturer, that it is our policy, as well as but sheer justice to our mechanics and manufacturers, who purchase a large proportion of our surplus agricultural products, to buy in return their manufactured goods now made in this country, of equal finish, and surpassing in durability most of those pouring in upon us from abroad — draining us of the precious metals, deranging our currency, and involving the nation in debt.

Resolved, That this Society respectfully recommends to its members, the more effectually to encourage *home Industry*, *home Products*, and *home Manufactures*, that they unite, from this time forth, and determine to use for their families, as far as practicable, such fabrics only as are of American growth and manufacture. Deeming it a high duty, and an ambition well becoming a free and independent people to be clad in the home-made cloths of their own country, and consume the food which their own fertile fields and varied climes produce in rich abundance everywhere, thus establishing a valuable home-trade among ourselves — diffusing and equalizing wealth among all classes, and laying deep the foundations of national prosperity and independence.

Resolved, That we cordially unite in the views of those of our countrymen who are forming "Home Leagues" or associations to carry out this national project, and not desiring to confine the benefits and operation of such an association to the limited sphere of this Society, but anxious to bring within its influence every citizen of New-Castle county — therefore

Resolved, That a committee of twenty be appointed at this time, to invite the co-operation of all our fellow-citizens favourable to the formation of a "Home-League" in this county, for the protection of American labour and home-products; and that this committee be requested to call a county meeting at the City-Hall, on the 22d day of February, the birth-day of the Father of his Country, as a time peculiarly appropriate for the commemoration of so good a work, and the adoption of so important a measure — whereupon a committee was appointed.

Samuel Wollaston, *Secretary.*

Philadelphia Society for Promoting Agriculture.

At an adjourned annual meeting, held Feb. 2d, 1842, Nicholas Biddle, president, in the chair, thirty-three members present,

The following gentlemen were elected officers for the ensuing year:

President,
N. Biddle;
Vice-Presidents,
Dr. James Mease, and
Aaron Clements;
Secretary, in place of K. Smith, resigned,
Philip Physick;
Assistant Secretary,
P. R. Freas;
Treasurer,
A. S. Roberts;
Librarian,
James Pedder;
Curators,
James Gowen, and
J. W. Roberts;
Committee of Correspondence,
Charles Roberts, and
John C. Montgomery.

Extract from the minutes,

K. Smith, *Secretary.*

The quantity of rain which fell during the 1st month (January), 1842, was ..... 1.346 inches.

Pennsylvania Hospital, 2d mo. 1, 1842.

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